Sankyo

SOUND XL-620

SUPERTRONIC

INSTRUCTION MANUAL

Thank you for purchasing the Sankyo SOUND XL-620 SUPERTRONIC camera, Sankyo's top-of-the-line model, highlighting a number of highly advanced features in a surprisingly slim, lightweight and compact body. The basic designing policy was to promote, as much as possible, the usage of ICs for long-lasting, dependable operation as well as the simplest possible handling.

Big features

- IC-controlled picture and sound lap dissolving.
- Built-in IC-constructed universal timer for various trick shooting techniques.
- Simultaneous picture and sound auto-fading.
- ICs for sound recording, motor speed control and exposure control.
- Green-colored positions for easy identification of standard settings of controls and switches.
- XL-specifications for low-light indoor filming.
- Ultra close-up filming down to 0 cm from the lens surface with macrophotography.
- Instant slow-motion filming.
- Power saving circuit to switch off the power circuit automatically after a non-operated interval of about 20 seconds.
- Electronic alarm to warn of the end of the film.
- A wide range of optional accessories for more filming flexibility.

Master camera operation to ensure full utilization of each of its outstanding features. Read this instruction manual carefully in order to familiarize yourself with the operation of the camera before starting to use it. Our desire is for you to obtain maximum enjoyment from all the 8 mm sound movies which are made with your new XL-620 camera.

Precautions

- The power circuit is automatically switched off after about 20 seconds of non-use with the power switch set to "ON", to save battery power. (see page 5.)
- Remove the batteries if you are not using the camera for several weeks; battery leakage can cause damage to the camera.
- Insert the batteries correctly; incorrectly loaded batteries will burn out.
- Be sure to check the polarity of the cord when you are using the external DC socket (9 V DC); the socket's polarity places (–) at the center pin and (+) at its rim.
- Wipe the film gate from time to time with a soft, dry cloth (see page 51).

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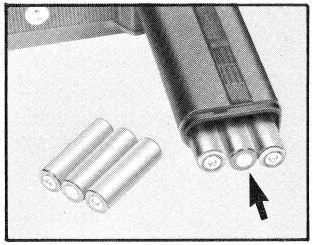
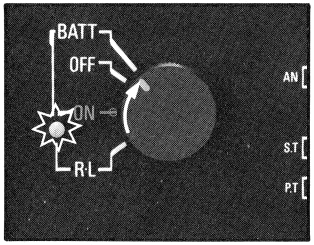
OPERATION PROCEDURE

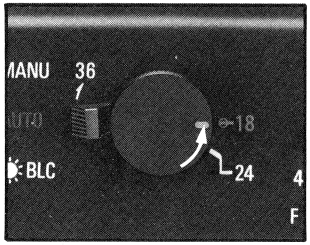
Keep in your mind that the basic settings of controls and switches for normal filming are indicated in green for easy identification. Make a quick check for this standard "green" alignment.



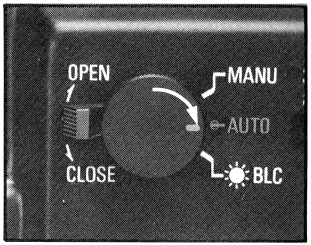
1 Load the batteries. (See p. 4)



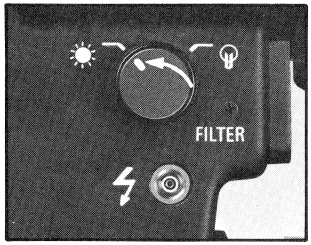
2 Check the battery power. (See p. 5)



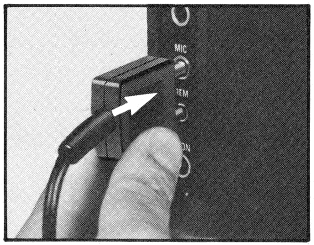
3 Set the filming speed selector to "18".



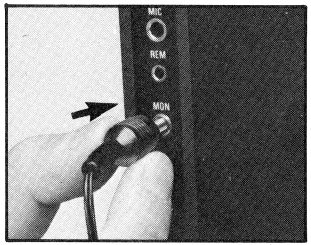
4 Set the auto/manual aperture control selector to "AUTO".



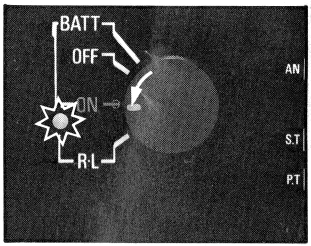
9 Confirm the setting of the filter control knob. (See p. 14)



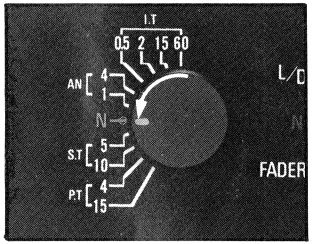
10 Connect the microphone. (See p. 15)



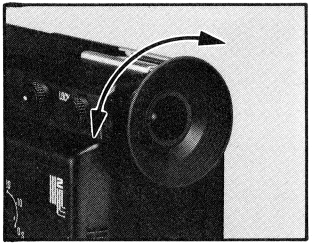
11 Connect the earphone.



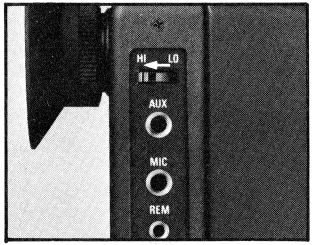
12 Set the power switch to "ON".



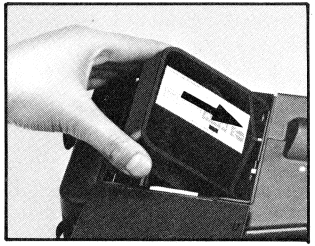
5 Set the trick shooting selector to the "N" (Neutral) position.



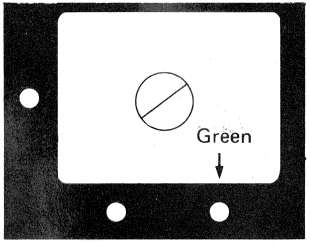
6 Adjust the viewfinder to your eyesight. (See p. 10)



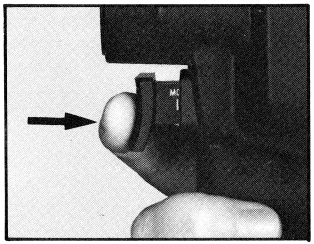
7 Turn the recording sensitivity selector to "HI".



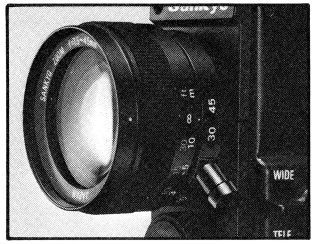
8 Insert the film cartridge. (See p. 6)



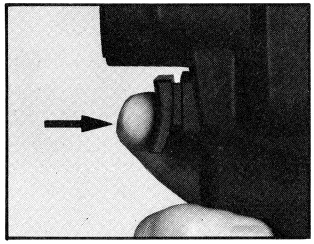
13 Confirm film transport. (See p. 7)



14 Monitor the sound by pressing the shutter release trigger halfway. (See p. 15)

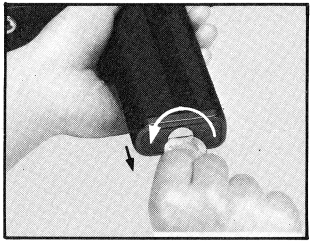


15 Focus the lens after setting the zoom ring to maximum telephoto. (See p. 11)

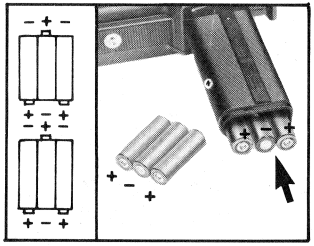


16 Start filming by fully pressing the shutter release trigger.

1 LOADING THE BATTERIES

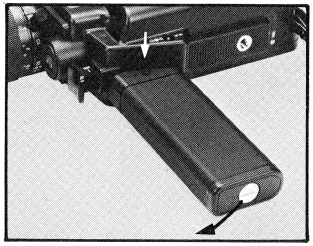


1. Turn the battery compartment lid stopper, located on the bottom of the grip, to the "0" (open) position using a coin or the like.
2. Remove the battery compartment lid.



3. Insert 6 "AA"-size dry-cell batteries following the diagram printed on the grip.
   The use of alkaline batteries is recommended for greatest efficiency.

4. Replace the lid and turn the stopper to the "C" (closed) position.

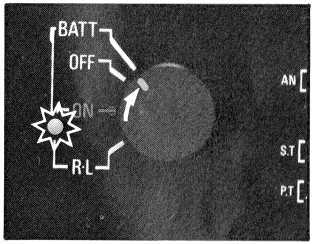


The batteries can be installed with the grip either folded or not. To erect the grip, swing it out until it locks in place. To fold it back, swing it back while pressing the grip lock release button.

- *Insert the batteries correctly. If loaded incorrectly, battery power will be wasted and the camera may be damaged.*
- *Exclusive DC Power Pack is optionally available to drive the camera with an external power supply. The DC Power Pack requires 6 "C"-size batteries.*

WARNING
Do not use rechargeable batteries.
IF RECHARGEABLE BATTERIES ARE USED, CARTRIDGE MAY JAM DUE TO INSUFFICIENT POWER.

2 CHECKING THE BATTERY POWER



1. Set the power switch to "BATT".
   If the battery check indicator lights, the batteries have sufficient power.
2. Releasing your finger from the power switch automatically returns it to the "OFF" position.

If the battery check indicator does not light, replace the batteries. Always replace all 6 batteries at the same time.

- *In extremely cold temperatures, the power of even a fresh set of batteries may be insufficient. If this happens, warm the batteries by putting them in your pocket for a short time, before starting to film.*
- *Use the exclusive Power Pack (optional) when filming for a long time or in extremely cold temperatures.*
- *Check the battery power periodically.*

Power saving circuit

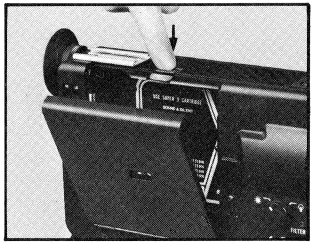
Your XL-620 has a built-in power saving circuit. When the camera is left unused for about 20 seconds with the power switch set to "ON", the power saving circuit functions to automatically switch off the power circuit. Extinguishing of the power light indicates this. DO NOT PRESS the shutter release trigger in this STATE. First return the power switch to "OFF" and then reset to "ON". Or, first hold the shutter release trigger at the "MON" position for about 1.5 seconds until the aperture indicator starts functioning and then start filming by fully pressing the trigger.

Since a slight amount of current is still consumed after automatic switch off with this power saving circuit, be sure to set the power switch to OFF when you are not using the camera for several hours.

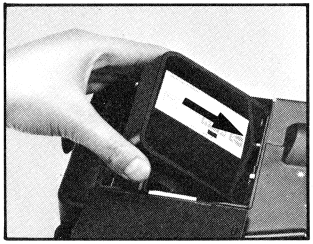
If the shutter release trigger is pressed fully from the very beginning after the power saving circuit has been activated, correct exposure may not be obtained.

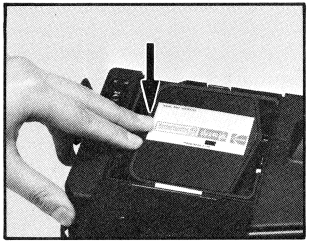
3 LOADING AND UNLOADING THE FILM

To load the film



1. Press the side cover release button.
2. Open the side cover.
3. Insert a Super-8 sound film cartridge or silent film cartridge.



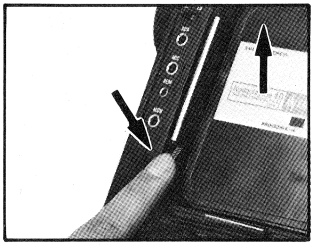


Align the camera guide pin with the cartridge guide slot, then press lightly on the cartridge from above.

4. Close the side cover.
   Film sensitivity will be automatically set.

Do not operate the camera with the cover remaining opened and a cartridge in position.

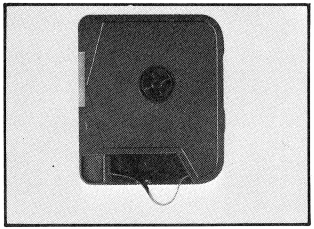
To unload the film

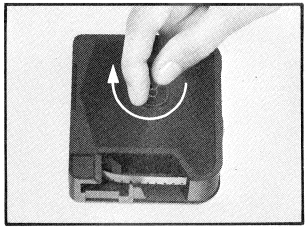


1. Open the side cover.
2. Press down the eject lever, and the cartridge will pop up.

Avoid removing the cartridge before the end of the film is reached since 15 cm (6") of the film will become fogged. Slack may also develop in the film.

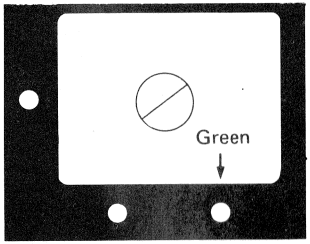
When the cartridge has slack





Slack film hanging from the cartridge may prevent proper loading. If this happens, turn the core on the back center of the cartridge in the take-up direction (clockwise) to remove the slack.

Film running indicator



Press the shutter release trigger fully, and a green light will flicker in the viewfinder to indicate that the film is running correctly. The T.V. lamp (red) on the front of the camera will light as an external indication that shooting is in progress.

Film running	Green light flickers
Film finished	Stops flickering (lit or unlit)
Film not transporting	Stops flickering (lit or unlit)

The green lamp does not flicker if the film is not correctly loaded. Try to reload it properly in such a case.

When the film jams

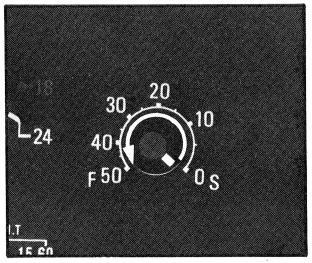
Jamming	Cause
Film jams at beginning	Improper loading of cartridge.
Film jams in middle of roll.	Insufficient battery power.

See page 47 "TROUBLESHOOTING"

Electronic film end alarm

As well as the film running indicator, an electronic alarm tone warns of the film end or improper loading of the film.

Film footage counter



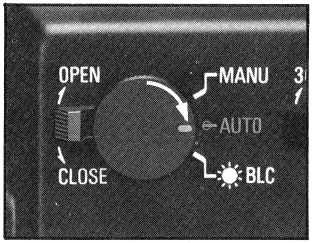
The white index line shows how much film has been used. When the cartridge is removed, it returns to zero automatically.

If the film running indicator stops flickering before the film counter reaches "50", this indicates a malfunctioning with either the cartridge or the camera. Consult your dealer.

* *When the cartridge is removed before the end of film is reached, the counter automatically resets to zero. If the unfinished cartridge is re-inserted, the footage counter will not correspond to the actual amount of remaining film.*

4 APERTURE CONTROL

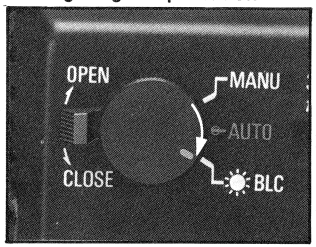
Automatic control



- Set the auto/manual aperture control selector to "AUTO".

In normal filming this setting gives correct exposure at all times.

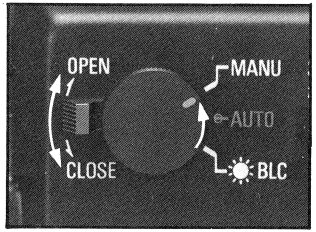
Backlighting compensation



Set the auto/manual aperture control selector to " ☀ BLC" when shooting against a subject in a brilliant light. The exposure is automatically increased allowing you to film with better exposure of the backlit subject.

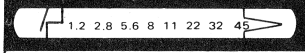
After backlight filming, be sure to return the auto/manual aperture control selector to "AUTO".

Manual control

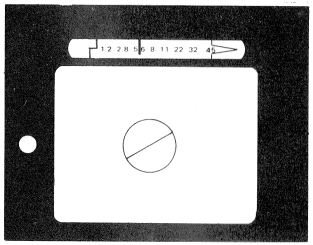


1. Set the auto/manual aperture control selector to "MANU".
2. Push the manual aperture control lever up toward "OPEN" or press down toward "CLOSE" referring to the aperture indicator needle in the viewfinder.
3. Release the lever when the aperture indicator needle reaches the desired value. Releasing the lever returns it automatically to its neutral position while the aperture indicator needle remains in the adjusted position.

Exposure warnings and remedies

Under-exposure	Over-exposure
	
The aperture indicator in the viewfinder enters the left red area.	The aperture indicator in the viewfinder enters the right red area.
Use artificial lighting.	Use ND filters. Filter size: M52 x 0.75

For accurate manual control

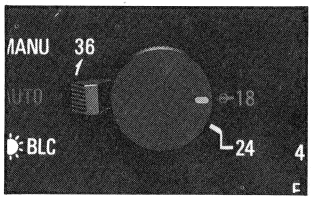


1. Set the auto/manual aperture control selector to "AUTO".
2. Move the camera close to the subject and shift the selector to "MANU".
3. This causes the aperture setting in the "AUTO" mode to be locked for stable exposure. Return to your shooting position.

Use this manual control when the subject is strongly backlit or when the subject-background contrast is high, or when you want to get special effects such as silhouetting. (See page 19.)

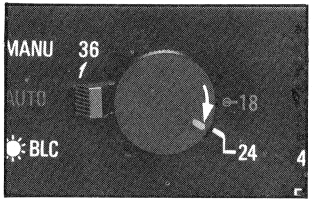
Be sure to return the auto/manual aperture control selector to "AUTO" when you have finished manual exposure.

5 SELECTING THE FILMING SPEED



Normal filming

- Set the filming speed selector to "18" (click-stop).



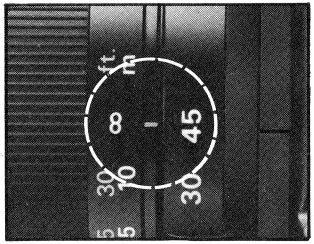
Filming with higher sound quality

- Set the filming speed selector to "24" (click-stop).

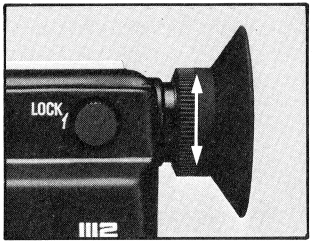
Adequate quality sound recording is possible when filming at 18 frames per second. Use the 24 frames per second option when higher sound quality is required. In this case, project the film using a sound projector which will operate at 24 frames per second.

* *Do not change the speed during filming. If you do, the film may be damaged.*
For sound filming, maintain the same filming speed for each individual roll of film.
* *Do not leave the filming speed selector positioned midway between the index lines, otherwise correct exposure or correct filming speed may not be obtained.*

6 ADJUSTING VIEWFINDER TO YOUR EYESIGHT

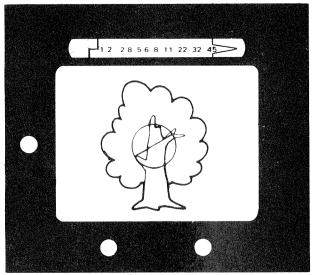


1. Set the zoom ring to maximum telephoto "45" mm.
2. Set the focusing ring to infinity (∞).



3. Loosen the diopter control lock knob by turning counterclockwise, then turn the diopter control ring while observing the viewfinder.

Turn the diopter control ring so that a distant subject (over 150 m/490 ft) and the center line of the split image range finder can be seen most clearly. Make sure that the upper and lower halves of the subject in the circle align perfectly with each other. If they are out of alignment, turn the ring for correction.



4. After adjustment, turn the diopter control lock knob clockwise to tighten.

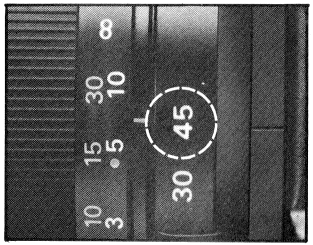
To check the eyepiece focus, estimate an object's distance from your position. Set the front lens focus ring to that distance mark. Set the zoom ring on full tele. The object should be in focus as you see it through the viewfinder. Several tries at different distances will ensure a properly focused viewfinder. Remember: If the viewfinder is not focused properly, you will never properly focus the front lens.

Nothing will be seen if the viewfinder shutter is closed. First turn the viewfinder shutter knob to the "0" (open) position.

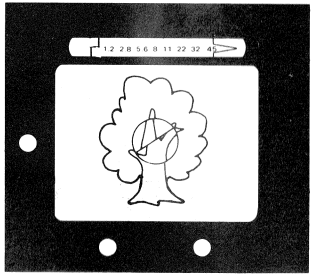
IMPORTANT
THIS IS THE ONLY CORRECT METHOD FOR ADJUSTING THE VIEWFINDER TO YOUR EYESIGHT.

7 FOCUSING

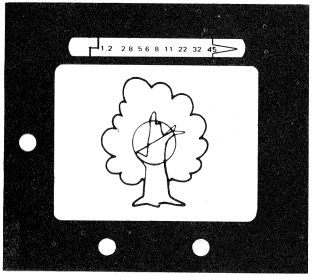
Split image focusing



1. Set the zoom ring to maximum telephoto "45" mm.
2. Turn the focusing ring so that the upper and lower halves of the subject in the circle of the split image range finder align with each other.



Out of focus



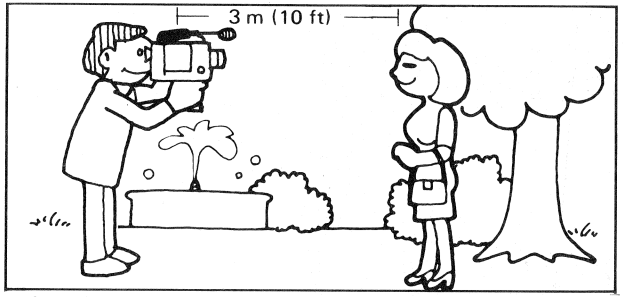
In focus

YOU MUST "ALWAYS" FOCUS ON TELEPHOTO (45 mm).

For focusing in macrophotography, refer to the "MACRO-PHOTOGRAPHY" section on pages 17, 18.

Scale focusing

1. Measure or estimate the distance between camera (ϕ mark) and subject.
2. Set the focusing ring to this value.



Universal focusing

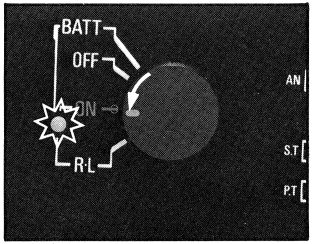
- Set the focusing ring to the green dot (●).

This method is based on the depth of field. The aperture should be f/5.6 or higher. Use this method when you have no time to focus as when making documentaries. You will find that for most daylight shooting the universal focus setting will give excellent results.

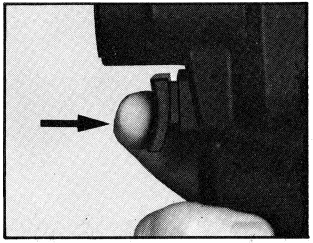
The universal focusing method, effective due to the wide depth of field, cannot be used with the lens set to maximum telephoto. For clear focusing, focal lengths falling in the range indicated by the green line are desirable.

8 SHOOTING

Normal filming



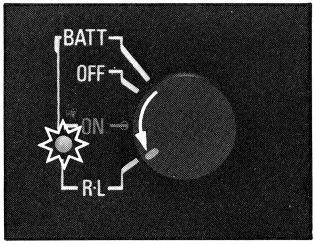
1. Set the power switch to "ON".



2. Press the shutter release trigger.

Press the trigger fully.

Running lock



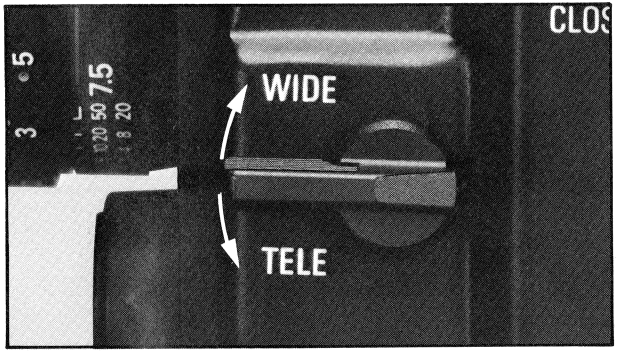
1. Set the power switch to "R-L".
2. Press the shutter release trigger.
   (Filming will continue if you remove your finger from the trigger.)
3. Press the shutter release trigger once again. (The trigger is unlocked and filming stops.)
4. Turn the power switch to "ON" or "OFF" with the shutter release trigger unlocked.

This new Push-Push system permits you to repeat running lock filming by merely operating the shutter release trigger.

* *When the power switch is at "OFF", power to all parts is shut off.*
* *The power switch cannot be moved from the "R-L" position unless the shutter release trigger is first unlocked.*
* *Avoid rapid, successive pressings of the shutter release trigger with the film cartridge loaded, since this may cause a film transport malfunction.*

9 ZOOMING

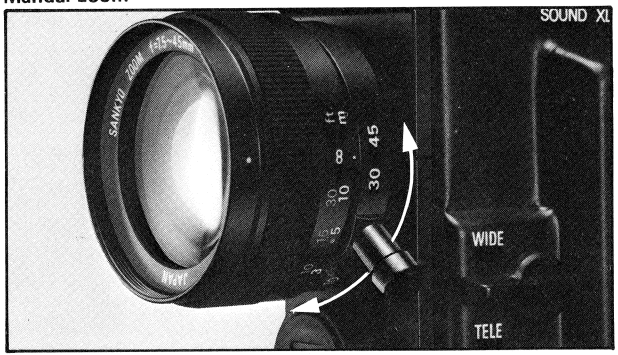
Power zoom



1. Press down the power zoom lever to "TELE", and the size of the image increases (zoom to telephoto).
2. Push up the power zoom lever to "WIDE", and the size of the image decreases (zoom to wide-angle).

A separate power zoom motor is employed. Therefore, power zooming is possible independently of the film running.

Manual zoom



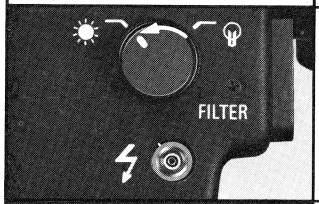
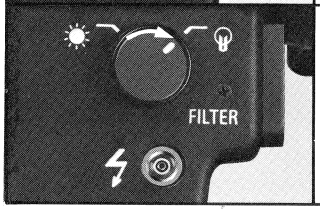
- Turn the zoom ring using the manual zoom lever.

10 FILTER CONTROL KNOB

This filter control knob is to move in or out the built-in type-A filter (color compensation filter for type-A color film).

☀ . . . . . Filter in

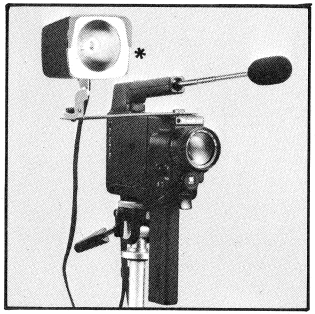
☁ . . . . . Filter out

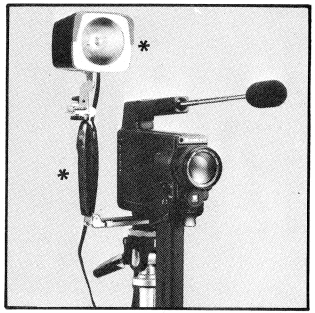
Filter control knob	Lighting
	• Sunshine • Fluorescent light • Blue light
	• Tungsten light • Movie light

Type-G film

Type-G film requires no color compensation filter for any type of lighting. When the film cartridge is inserted, the built-in type-A filter is automatically removed. The filter control has no effect.

Movie light





The movie light can be screwed into the movie light socket on top of the camera.

When the movie light is screwed into the movie light socket, the built-in filter is automatically removed.

When the Telescopic Microphone (optional) is mounted on the accessory shoe, employ a Movie Light Adapter (optional) screwed into the movie light socket and mount the movie light onto the adapter, thereby avoiding conflict between the microphone and movie light. The built-in filter is also automatically removed.

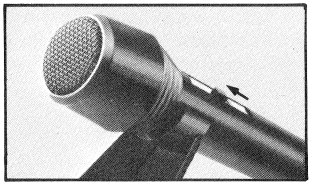
* *Movie lights should be sufficiently removed from the camera to prevent discoloration and deformation of the camera body due to heat.*

* *Do not mount a movie light on the accessory shoe. Movie lights get very hot. Be careful not to allow the camera body to be damaged by heat.*

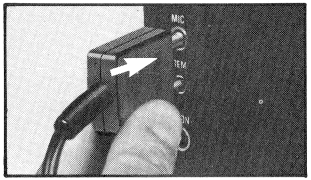
* *Not available from Sankyo.*

11 SOUND FILMING

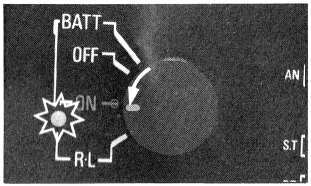
Using the microphone provided



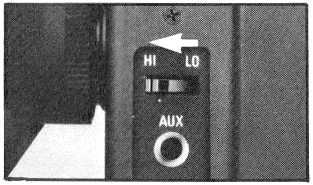
1. Set the remote control switch on the microphone to "ON".



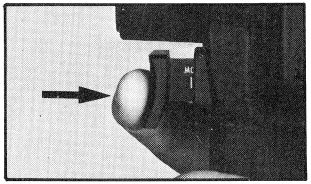
2. Connect the microphone to the "MIC" and "REM" jacks.



3. Set the camera's power switch to "ON".



4. Set the recording sensitivity switch to "HI".

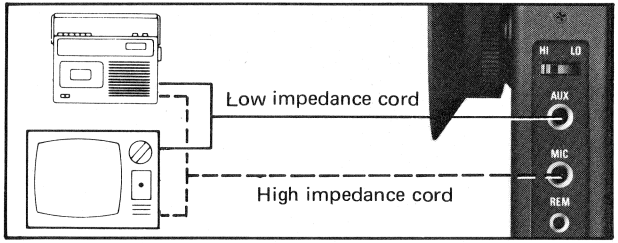


5. Press the shutter release trigger gently up to "MON".
6. Microphone should be held at least 1 meter (3 feet) away from camera.

The recording level is at an optimum when the sound level indicator (orange) in the viewfinder flickers.
If the sound level indicator remains on or background noise is excessive, set the recording sensitivity selector to "LO". Plug the earphone provided into the "MON" jack, and you can monitor the sound being recorded.
Now you are ready to film while recording sound. Press the shutter trigger fully, and filming and recording will start at the same time. In the viewfinder you will see the green and orange lamps flickering.

* *When you use a microphone other than the one provided, select one with an impedance of 200 to 1 000 ohms.*
* *With the remote control switch at OFF, you can monitor the sound level, but you can't operate the camera.*
* *Operate the remote control switch as gently as possible, or unwanted clicks could be recorded.*
* *Remote control filming is possible using the microphone provided. (See p. 26)*

Recording from other external sources

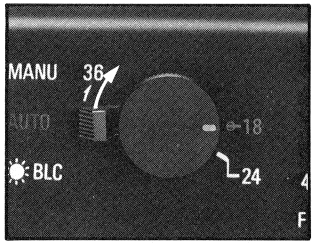


- Connect a sound source such as a TV, radio, tuner, tape deck, record player, etc. to the "AUX" jack.
- While observing the sound level indicator, adjust the recording level with the volume control on the source device.

Both the microphone sound and sound from an external source connected to the "AUX" jack can be recorded simultaneously. If you mount the Telescopic Microphone onto the accessory shoe, a mixed sound of all three of these sources can also be recorded.

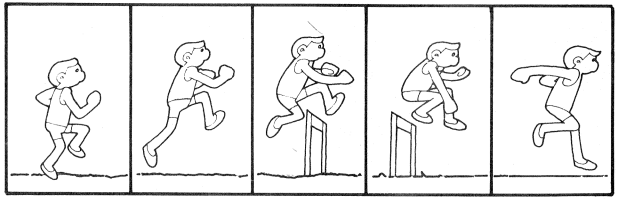
With some connection cords, particularly high impedance cords, the camera may fail to record with an external source connected to the "AUX" jack. In such a case, connect the cord to the "MIC" jack or use a low impedance cord. Be sure to adjust the recording level using the source device's volume control while monitoring with the earphone.

12 SLOW-MOTION FILMING



- Push the slow-motion lever up toward "36" while filming at either 18 or 24 fps.

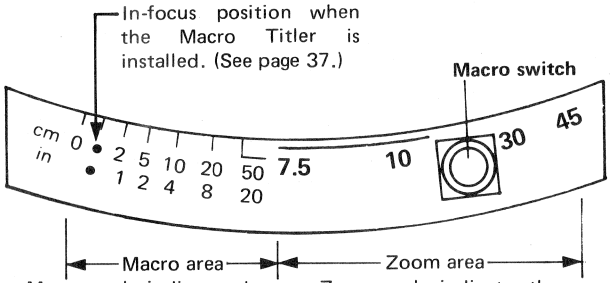
The built-in instant slow-motion system lets you change continuously from either 18 or 24 fps to slow-motion filming at 36 fps. When you release your finger from the slow-motion lever, the lever will automatically return to its original position and the camera will continue to film at that speed. Use to film and analyze sports actions, etc.



13 MACROPHOTOGRAPHY

Macro shots mean close-ups of small subjects taken from very short distances. In addition to zooming, the built-in zoom lens with macro allows close-up shooting from distances between 0 cm to 150 cm (0" to 60"). Continuous filming from zoom to macro or from macro to zoom is also possible by turning the manual zoom ring.
The macro facility will add immeasurable interest to your projected show. For details on titling, macro superimposition and other advanced macrophotography techniques, see pages 36, 37, 38 and 39.

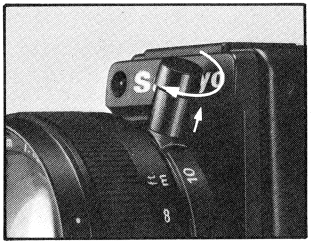
Zoom and Macro


In-focus position when the Macro Titler is installed. (See page 37.)
Macro switch
cm 0 2 5 10 20 50 7.5 10 30 45
in 1 2 4 8 20
Macro area
Zoom area

Macro scale indicates the distance between the front surface of the lens and the subject.

Zoom scale indicates the focal length of the zoom lens.

Macro switch

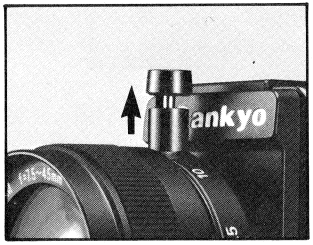


This macro switch functions in two ways, either being locked or unlocked.

Macro filming with the macro switch locked

- Pull outward and turn the macro switch to lock.

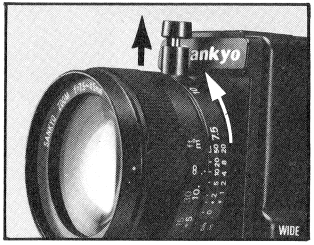
In this state, the zoom ring can be turned from the macro area to the zoom area or vice versa, thus enabling continuous filming from macro to zoom or vice versa.
To release the macro switch, pull outward and turn in the opposite direction.



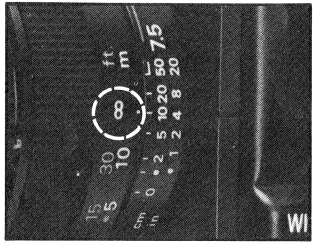
Macro filming with the macro switch unlocked

- Turn the zoom ring into the macro area while pulling the macro switch slightly outward.
  When the zoom ring is turned to the zoom area, the switch is automatically released.

Operation



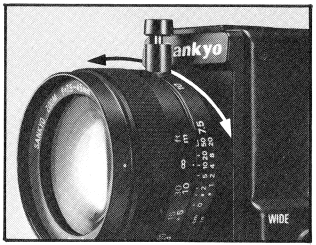
1. Pull outward the macro switch and turn the zoom ring into the macro area.



2. Set the focusing ring to infinity (∞).

This is only to get the best condition in macrophotography. To film continuously from macro to zoom:

1) Set the macro zoom ring to the correct camera-to-macro subject distance.
2) Set the focusing ring to the correct camera-to-normal subject distance.
3) Begin filming while turning the zoom ring to the telephoto position.



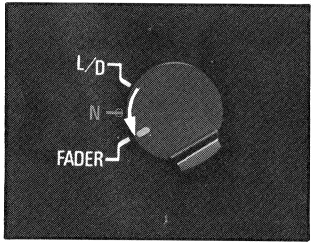
3. Focus the lens by turning the zoom ring.
The split image range finder functions even in macro filming.

For scale focusing the distance between the orange "●" mark on the focusing ring (this indicates the position of the front surface of the lens) and the subject should be measured. Set this value on the macro scale on the zoom ring.
The distance figures on the macro scale are for when the focusing ring is set to infinity.

* *After filming with the macro switch locked, do not forget to unlock it.*
* *The closer the camera is to the subject, the less the depth of field (see p. 43). Be most careful to focus accurately for macro shots.*
* *Sufficient illumination should be provided so that apertures smaller than f/4 can always be used.*

14 FADE-IN AND FADE-OUT

Automatic picture and sound simultaneous fade-in/out

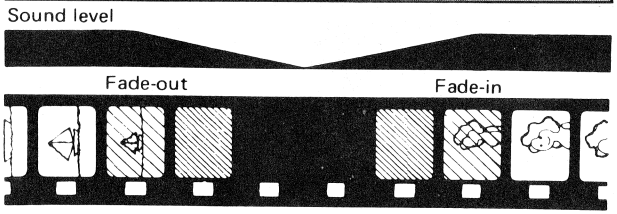


- Press the lap dissolve/auto-fade lever down toward "FADER" while filming with the auto/manual aperture control selector set to "AUTO".

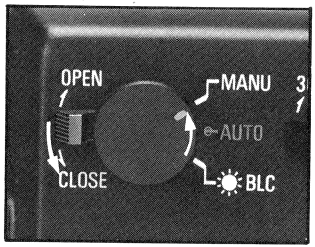
Hold the lever pressed down until the red auto-fade indicator lights. The picture and sound will smoothly fade-out in about 4 seconds. When you release the auto-fade lever, the picture and sound will fade-in to the original level in about 4 seconds. If you release the lever before the red indicator lights, fade-out stops and fade-in starts.

If you wish to begin filming with the fade-in technique, first press the auto-fade lever down toward "FADER". After confirming that the auto-fade indicator lights, press the shutter release trigger and release the auto-fade lever. In about 4 seconds the picture and sound will fade-in.

In the automatic fade-out, the aperture is closed by about 5 f-stops. Extremely bright subjects may, therefore, not be completely faded out.



Manual picture fade-out



1. While aiming at a subject to be shot, turn the auto/manual aperture control selector from "AUTO" to "MANU".
2. Press the shutter release trigger and press down the manual aperture control lever toward "CLOSE" for about 4 seconds.

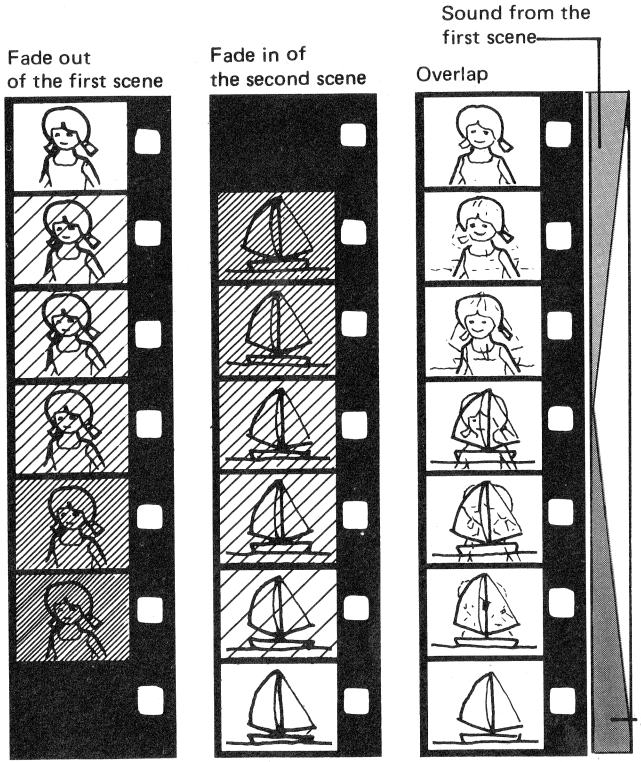
Manual picture fade-in

1. While aiming at a subject, turn the auto/manual aperture control selector from "AUTO" to "MANU".
2. Press the manual aperture control lever down toward "CLOSE" until the aperture indicator points to an aperture about 5 f-stops smaller than that in the "AUTO" mode.
3. Press the shutter release trigger and push the manual aperture control lever up toward "OPEN" for about 4 seconds.

While fading in or out, observe the aperture indicator needle. To manually fade-out, release the manual aperture control lever when the needle reaches an aperture about 5 f-stops smaller than that in the "AUTO" mode. To manually fade-in, the needle should return to the aperture setting normally observed in the "AUTO" mode. Further holding of aperture control lever toward "OPEN" will result in over-exposure.

After manual picture fading, be sure to return the aperture control selector to "AUTO".

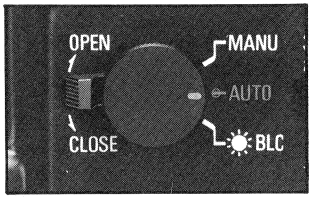
15 LAP DISSOLVE

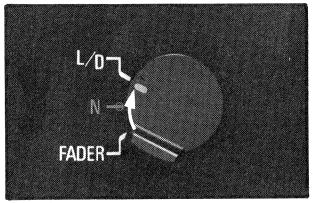


LAP DISSOLVING, WHEN USING SOUND FILMS, CAN ONLY BE PERFORMED WITH "KODAK" SOUND FILMS.

Lap dissolving is a technique where two scenes are superimposed with one fading out while the other fades in. For this purpose, after the first scene has been shot with the fade-out technique the film is rewound to a point where the fading out of the first scene began, and at this point the second scene is shot with the fade-in technique. The XL-620 performs this process fully automatically for both picture and sound with a single operation of the lap dissolve lever.

Operation





1. Set the auto/manual aperture control selector to "AUTO".
2. Set the trick shooting knob to "N".
3. Start filming by pressing the shutter release trigger.
4. Push the lap dissolve lever up toward "L/D" when you wish to apply the lap dissolve technique.
   The red lap dissolve indicator in the viewfinder will light and fading out will start. This indicator remains lit until the whole lap dissolve process has been completed.
5. Release the shutter release trigger when the camera automatically stops.

6. The film will automatically rewind to the point where the fading out started and will stop there.
7. Press the shutter release trigger aiming at the second scene. Fading in of the second scene will start.
   After fade-in is completed, the lap dissolve indicator in the viewfinder extinguishes.

* *Employ the automatic aperture control mode for lap dissolving.*
* *Push the lap dissolve lever toward "L/D" while pressing the shutter release trigger, otherwise the lap dissolve mode cannot be entered.*
* *The lap dissolve lever returns automatically to its N (neutral) position when you release your finger, but the lap dissolve process continues.*
* *For sound films it is necessary to hold the shutter release trigger in until the camera automatically stops either during fade-out or fade-in. For silent films the lap dissolve process continues if the shutter release trigger goes unlocked. If you test the lap dissolve mode with no cartridge placed in, the camera function is identical with when a silent film is loaded.*
* *With sound films, do not unlock the shutter release trigger in the middle of the fade-out or fade-in process. If so proper lap dissolve effect cannot be obtained because the process is interrupted.*
* *With silent films the film running indicator stops flickering during the fade-out and rewind modes.*
* *With sound films, do not press the shutter release trigger while the film is being rewound, otherwise the film may be damaged.*
* *Fading of sound can be confirmed through employing an earphone.*

Description

The lap dissolve process consists of fade-out, rewind and fade-in. When the lap dissolve indicator lights, fade-out of the first scene starts. The camera stops filming automatically after 80 frames have been exposed. This filming time takes about 4.4 seconds at a filming speed of 18 fps. After a brief pause, the camera automatically rewinds the film for about 80 frames, then it stops again. The second scene can be shot with fading in only by pressing the shutter release trigger. About 4.4 seconds is required to complete the fade-in. You can re-enter the normal filming mode directly following the lap dissolve process by continuing to hold in the shutter release trigger.

* *Lap dissolving cannot be performed during slow-motion filming.*
* *If the power switch is set to "OFF" in the middle of the lap dissolve process, the lap dissolve mode is cancelled.*
* *The power saving circuit does not function in the lap dissolve mode. Therefore, you can take time in preparing for the second scene without worrying about the power switching off after 20 seconds and the lap dissolve process thereby being cancelled. However, if you need a rather long time before you start filming the second scene, set the power switch to "OFF".*
* *If the power switch is set to "OFF" after the film has been rewound, the lap dissolve process can be continued by employing the automatic picture and sound fade-in technique after the power switch is set to "ON" again.*
* *Do not engage in lap dissolve filming with the beginning and final 5 ft of the roll of film.*
* *Do not engage in lap dissolve filming with silent films at low temperatures.*

16 SUPERIMPOSE

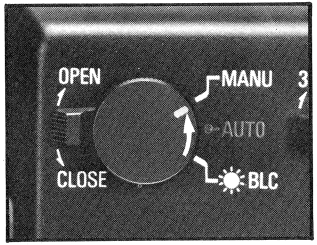
The combination of the lap dissolve facility and the manual aperture control mode makes possible exposure of superimposed scenes. Various advanced filming techniques such as:

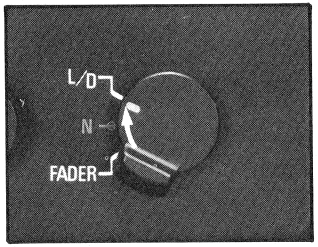
(1) a transition from one scene to the next scene while giving more emphasis to the latter scene, and

(2) a superimposition of the title as the first scene and the subject as the second scene which follows continuously,

will be possible after you have become acquainted with the basic procedure.

Operation





1. While aiming at a subject, turn the auto/manual aperture control selector from "AUTO" to "MANU".
2. While pressing the shutter release trigger to film the first scene, push the lap dissolve lever up toward "L/D". The lap dissolve indicator will light in the viewfinder and the camera will operate for 80 frames (about 4.4 seconds). Then the film will rewind automatically and the camera stops running.
   (With sound films, the film is rewound for 80 frames after you have released the shutter release trigger and the camera stops running.)
3. Return the power switch to "OFF" and wait for more than 3 seconds. Then set it to "ON" again. (This makes the lap dissolve mechanism become disengaged, therefore, the lap dissolve indicator will not light in the following process.)
4. Return the auto/manual aperture control selector to "AUTO".
5. Film the second scene.
   Continue filming the second scene for more than 5 seconds, and you will have a section of superimposed images.

* *It is recommended that the aperture be adjusted manually to a setting about one f-stop smaller than that for the correct exposure for both the first and second scenes, though it depends on the type of film and the contrast of the subject being shot.*
* *If you wish to give more emphasis to either one of the two superimposed scenes, apply optimum exposure to the one which you are going to emphasize and underexpose the other.*
* *On the double-exposed section, the sound corresponding to the second scene is recorded with more emphasis.*

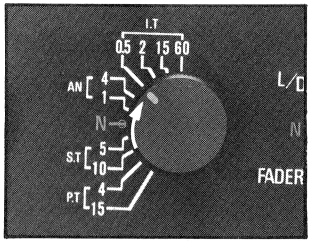
17 TRICK SHOOTING

The XL-620 has a built-in IC-constructed universal timer which enables various ways of trick programming. The universal timer functions in the four different modes; interval timer mode, animation timer mode, self-timer mode and preset timer mode.
It is recommendable to use a Remote Control for releasing the shutter in these modes. Use of a tripod is also desirable.

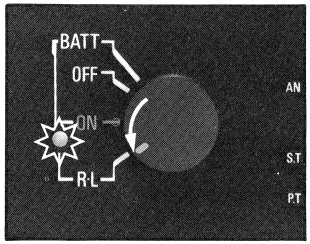
WARNING
Do not remove the cartridge in the "R-L" mode, otherwise damage to the film and the recording mechanism will result.

Interval timer mode
(IT 0.5, IT 2, IT 15, IT 60)

Single-frame filming is automatically performed at a selected interval of 0.5, 2, 15 or 60 seconds.



1. Set the trick shooting knob to "IT 0.5", "IT 2", "IT 15" or "IT 60" depending on the interval desired between two successive exposures.

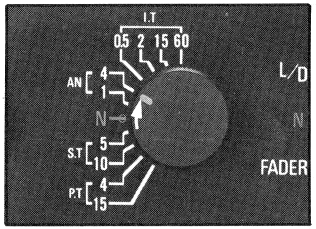


2. Set the power switch to "R-L".
3. Close the viewfinder shutter by setting the viewfinder shutter knob to "C".
4. Press the shutter release trigger to enter the running lock mode. Single-frame filming will be performed at the selected interval.
5. To stop filming, press the shutter release trigger.

* *If the interval timer mode is selected, the lap dissolve facility does not function.*
* *The interval timer mode enables single-frame exposures at a specified speed regardless of the setting of the filming speed selector.*
* *For details of remote control operation, see P. 26.*
* *Do not connect a microphone.*

Animation timer mode (AN1, AN4)

Single-frame filming or 4-frame filming is performed for facilitating production of animations.

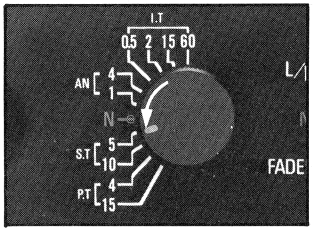


- When the shutter release trigger is pressed with the trick shooting knob set to "AN 1", a single frame is exposed and the camera stops.
- When the shutter release trigger is pressed with the trick shooting knob set to "AN 4", 4 frames are successively exposed and the camera stops.

** If the animation timer mode is selected, the lap dissolve facility does not function.*
** The animation timer mode enables exposures at a specified speed regardless of the setting of the filming speed selector.*
** Do not connect a microphone.*
** If you release your finger from the shutter release trigger in the middle of the 4-frame filming, the camera stops filming.*

Self-timer mode (ST 5, ST 10)

The camera starts filming automatically after a standby time of 10 seconds and stops after filming for either 5 seconds or 10 seconds.

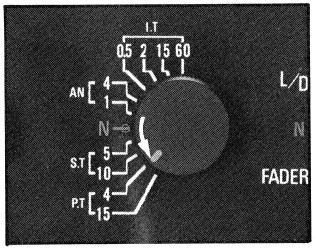


1. Set the trick shooting knob to "ST 5" or "ST 10" depending on the desired shooting time.
2. Set the power switch to "R-L".
3. Close the viewfinder shutter.
4. Press the shutter release trigger to enter the running lock mode.
   Filming will start after 10 seconds and continue filming for 5 seconds or 10 seconds. Then the camera stops automatically.
5. To release the running lock mode, press the shutter release trigger.

** To stop the camera, release the running lock mode by unlocking the shutter release trigger.*
** Self-timer filming is possible either at 18 fps or 24 fps. Set the filming speed selector to the desired speed beforehand.*
** If the lap dissolve/auto-fader lever is operated for lap dissolving during self-timer filming, the self-timer mode is replaced with the lap dissolve mode.*

Preset timer mode (PT 4, PT 15)

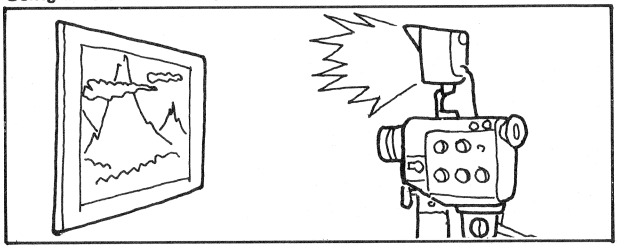
Filming stops automatically after 4 seconds or 15 seconds of filming.



1. Set the trick shooting knob to "PT 4" or "PT 15" depending on the desired shooting time.
2. Press the shutter release trigger.
   Filming will start and the camera will automatically stop after 4 seconds or 15 seconds of filming.
3. If you wish to stop the camera before the preset time is reached, release your finger from the shutter release trigger.

** Preset timer filming is possible either at 18 or 24 fps.*
** If the lap dissolve/auto-fader lever is operated for lap dissolving during preset timer filming, the preset timer mode is replaced with the lap dissolve mode.*

Using an electronic flash

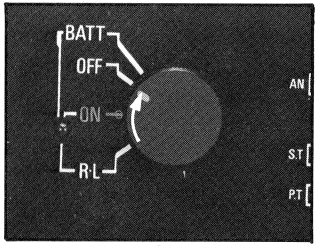


Flash synchronization is possible in combination with single-frame filming. Since single-frame exposure is performed in the interval timer and animation timer modes, use an electronic flash only in these modes.

- Plug the cord of an electronic flash into the flash sync socket.
- Calculate the aperture by dividing the guide number (from the flash manual) by the distance.
- Adjust the aperture with the manual aperture control lever.
- Press the shutter release trigger.

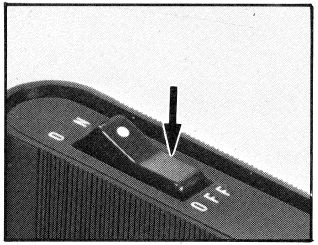
The service life of an electronic flash is approximately 5 000 flashes. When making a large number of single-frame exposures it is important to remember this.

18 REMOTE CONTROL FILMING

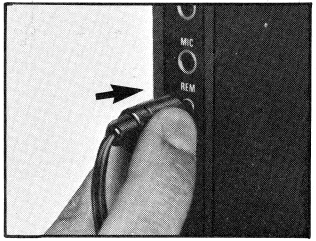


Remote control filming is possible with an optional remote control or the remote control microphone provided.

1. Set the camera's power switch to "OFF".

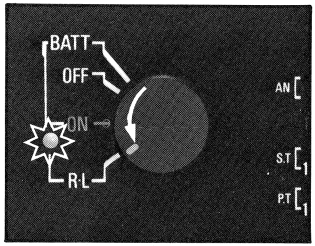


2. Set the remote control switch to "OFF".

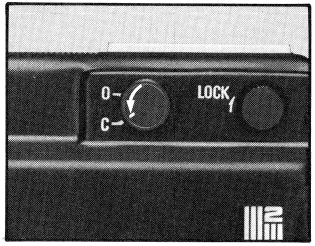


3. Plug the remote control into the "REM" jack.

When using the remote control microphone, connect this to the "MIC" and "REM" jacks.

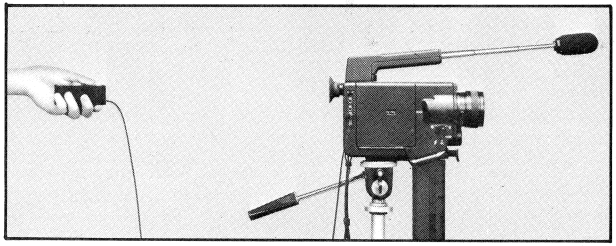


4. Set the camera's power switch to "R-L" and press the shutter trigger.



5. Set the viewfinder shutter knob to "C" (closed).

6. Set the remote control switch to "ON", and filming will start.

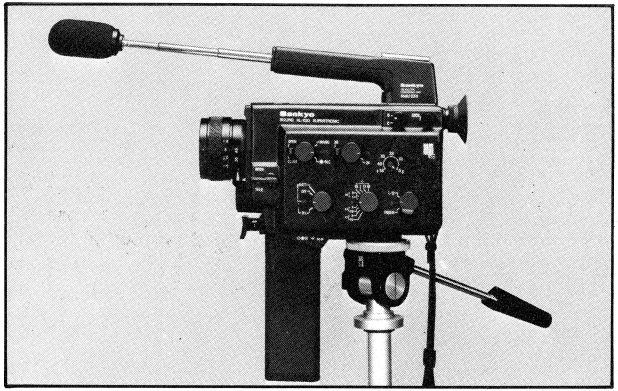


When you finish remote control filming

1. Set the remote control switch to "OFF".
2. Press the shutter release trigger to unlock.
3. Set the camera's power switch to "OFF".
4. Unplug the remote control.

* *Be careful not to unplug the remote control with the shutter trigger locked, or the camera will continue to film. Be sure to observe the sequence of operation mentioned above.*
* *Setting the remote control switch to "OFF" stops film transport, but the sound recording mechanism is not released as long as the camera's power switch is set to "R-L". Avoid removing the film in this state, otherwise damage to the film and the recording mechanism will result.*
* *Viewfinder shutter*
  When filming without looking through the viewfinder, for example when using a Remote Control, Radio Control, or a tripod, light may come through the eyepiece. To prevent this, set the viewfinder shutter knob to "C".
* *The Remote Control or the remote control switch on the microphone can be used for single-frame filming.*
  However, avoid single-frame filming at intervals of shorter than 0.5 second with the trick shooting knob set to "AN 1", as this may cause the film to jam.

19 TRIPOD MOUNTING



- Screw the tripod into the hole in the bottom of the camera body.

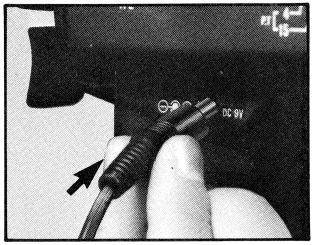
Be sure to use a tripod for telephoto, close-up shooting and remote control, radio control or timer filming to get more stable pictures.

When carrying the camera on the tripod, support the camera to avoid exposing it to shocks or vibrations.

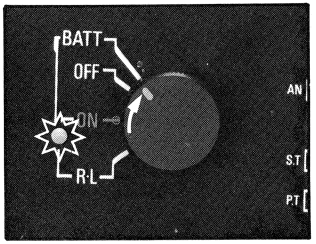
20 EXTERNAL DC POWER

The camera is provided with a "9 V DC" socket so that it can also be driven from an external DC power source. The exclusive DC Power Pack is available from Sankyo. It will give you much convenience when you have to use the camera over a long period.

Do not use any external power source other than that specified.



1. Connect the cord of the DC Power Pack to the "9 V DC" socket.



2. Turn the power switch to "BATT" and make sure that the battery check indicator lights.

FILMING AND SOUND RECORDING TECHNIQUES

1 Make the battery check a habit

- Battery power may be insufficient for sound filming even though sound monitoring is possible. Filming under such conditions may result in the recorded sound being distorted or faulty film transport.
- It is recommended that you check the battery power from time to time, when you switch the scenes to be shot, for instance.

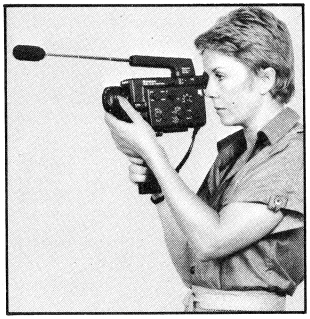
2 Allow an idle running interval for the first 2 or 3 seconds after the cartridge is newly inserted

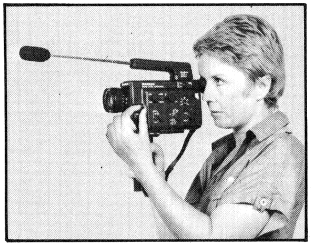
If you record sound from the very beginning of the film, it may become distorted due to curling of the film.

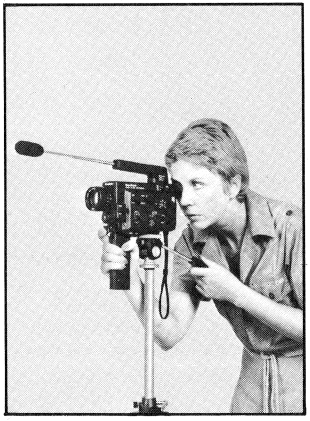
3 Time your shots to be at least 15 seconds in duration

- Short scenes will make your movies unstable.
- In simultaneous sound recording, longer shots are especially convenient in balancing the picture and sound.
- Shooting longer scenes also makes editing easier.

4 Hold the camera steady



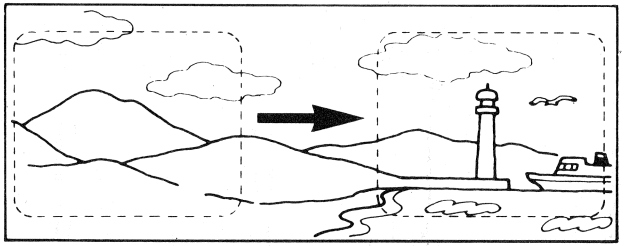


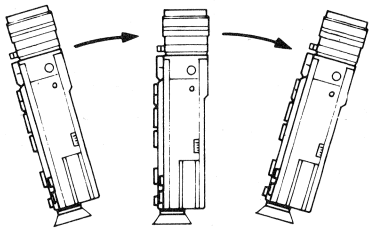


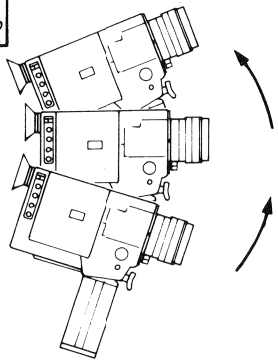
- One way is to brace the elbow of the arm holding the camera against the chest.
- Put the wrist strap round your wrist and secure firmly with the ring.
- Be sure to use a tripod when shooting telephoto scenes, since shaking of the hand will make the projected movie difficult to see.

5 For effective panning and tilting

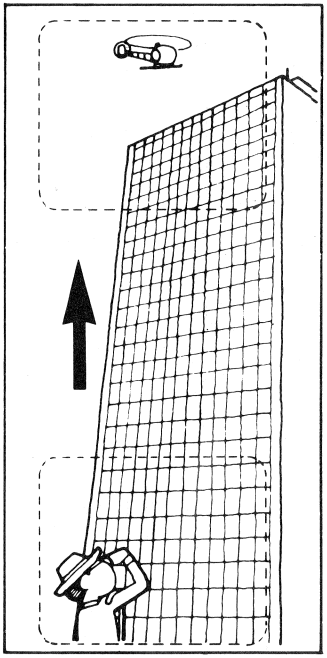
Panning







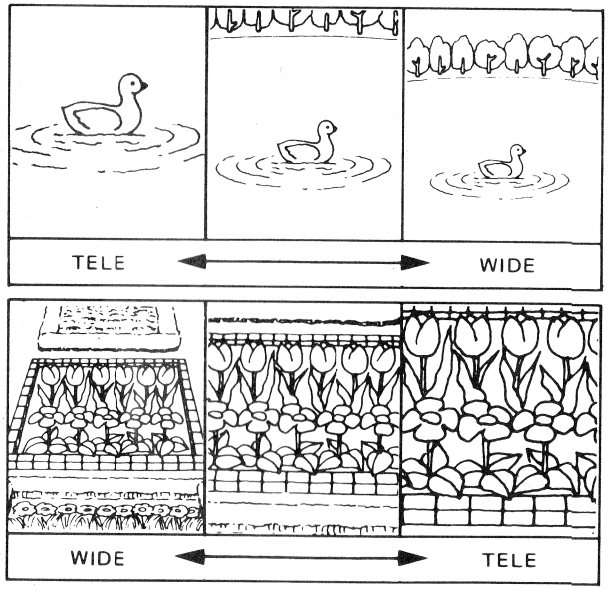
Tilting



1. Start: Hold still for about 3 seconds.
2. Pan or tilt slowly.
3. Stop: Hold still for about 3 seconds.

- Determine in advance from what point to what point you are going to shoot.
- Pan or tilt steadily from one point to the other. Do not return the camera to the starting point.
- Hold the camera still for about 3 seconds when you reach the scene you wish to emphasize.
- Fast panning or tilting will make the movie unstable.

6 Power Zoom for smooth zooming

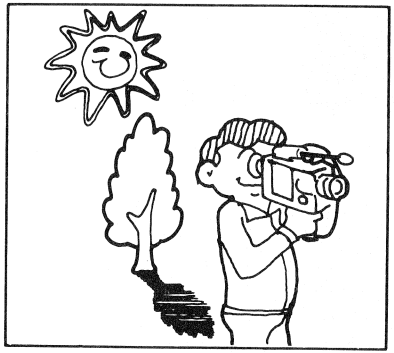


Except when aiming for special effects, first focus the lens with the zoom ring at maximum telephoto, then zoom. Use manual zoom to determine composition or when you wish to obtain special effects by quickly changing from telephoto to wide-angle or vice versa.

7 Do not change the camera angle very often

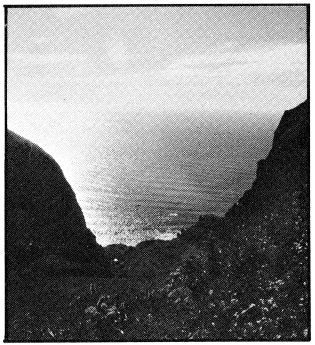
Panning, tilting and zooming should only occasionally be used for special effects. Otherwise the movie will be unstable.

8 With the sun behind you



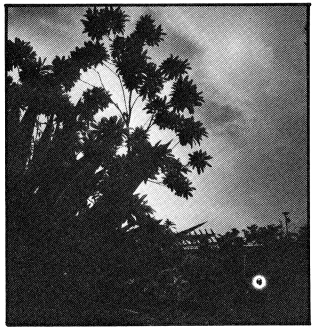
Take pictures with the sun behind you whenever possible.

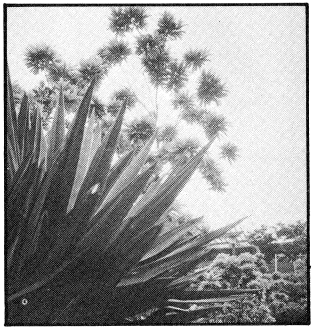
9 Against the sun



Use occasionally to get beautiful effects at the edge of the sea, through trees, for silhouettes, for example.

If necessary, use the backlighting compensator.





10 Shooting indoors

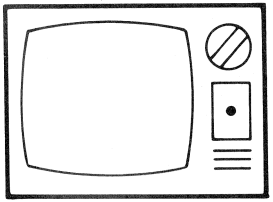
One of the big features of this camera is the possibility of indoor shooting in the low light. The ASA 160 film is ideal for use with this camera when shooting indoors. It will allow correctly exposed filming in low light conditions, assuring sharp and clear pictures.

Types of film and filming conditions

Film	Room lighting		Filter
Type A ASA 160	Fluorescent light or mercury-vapor lamp		Required
	Incandescent light		Not required (Turn the filter control knob to 💡.)
Type A ASA 40	Additional illumination sometimes required.	Blue light	Required
		Movie light	Not required (Automatically controlled when movie light is installed in camera's movie light socket.)
Type G ASA 160			Not required (Automatically controlled by cartridge insertion.)

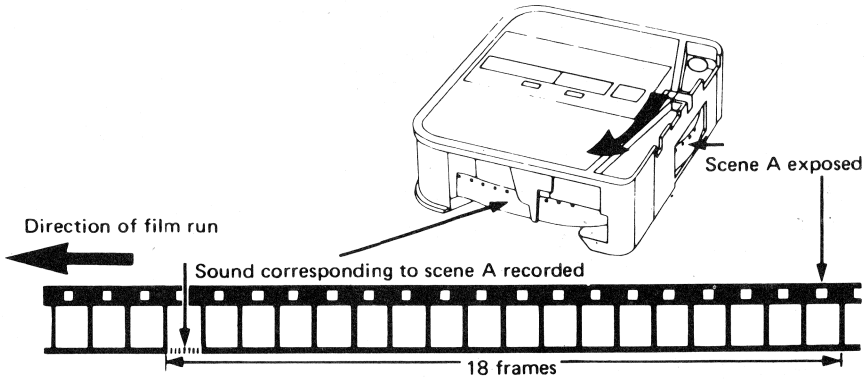
- The darker the light, the less the depth of field. Be accurate in focusing.

11 Television screen is excellent filming subject



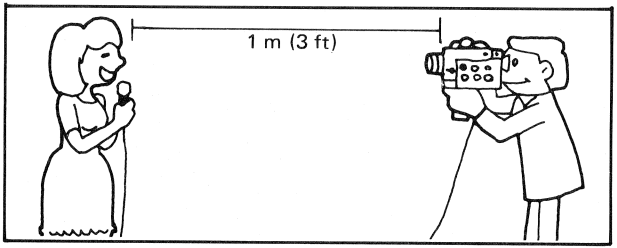
- Shooting the television screen at a filming speed of 18 f.p.s. with the built-in type A filter moved in as when shooting in the daylight.
- Exercise care to prevent the reflection of undesired images onto the screen.
- Normally color-balanced television pictures may become bluish on the film. Adjust the color balance with the TV set controls until the picture appears slightly reddish.
- Keep the microphone at least 1 m (3 ft) away from the TV set, when using the provided one, to avoid pickup of noise.

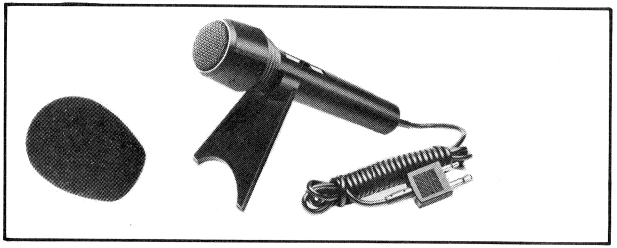
12 Sound is recorded 18 frames ahead of the corresponding picture



- The picture and sound are not at the same position on the film. The sound is recorded on the sound track 18 frames ahead of the corresponding picture.
- Try to finish the cut at a break in the conversation or in the sound to be recorded.
- Filming slightly longer than necessary before and after the object sound will make editing easier.

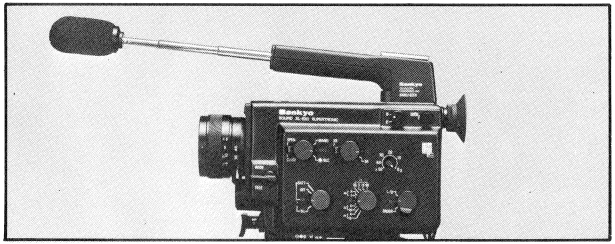
13 Care exercised with the microphone will determine the sound quality





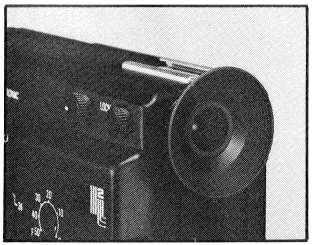
1. **More than 1 m (3 ft) between mike and camera**
   The microphone provided is omni-directional and will pick up camera running noise if placed too close to the camera. Always keep the microphone at least 1 m (3 ft) away from the camera.
2. **Position mike close to the sound source**
   Always place the microphone as close to the sound source as possible, especially when there is a large amount of background noise, to make the object sound more conspicuous. When it is difficult to position the mike close to the object sound, employ a uni-directional telescopic condenser microphone or FM wireless microphone (both optional).
3. **Wind screen plays an important part**
   Employing the wind screen (provided) does not degrade the sound quality in any way and may be used all the time. Be sure to employ the wind screen, especially when using the microphone outdoors or close to the mouth, since wind noise or breathing will make the recorded sound difficult to hear and understand.
4. **Vibrations are an enemy of the microphone**
   Vibrations caused by the microphone being passed from one hand to the other or pulling the microhone cord are recorded as noise. Do not rub or beat on the microphone.

14 Take advantage of optional microphone usage

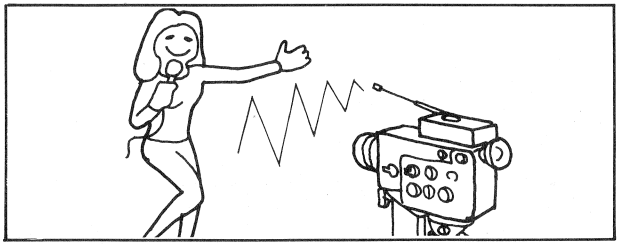


1. Telescopic Condenser Microphone

The optionally available unidirectional Telescopic Condenser Microphone can be mounted onto the accessory shoe on top of the camera. You are freed from any inconvenience of handling a separate microphone. Enhanced mobility and better recorded sounds are assured at all times. The accessory shoe is equipped with connection terminals which enable electrical connection to the microphone simply by mounting it. On top of the Telescopic Microphone is also provided an accessory shoe for accommodating other accessories such as a Radio Control. To prevent the microphone from becoming detached during operation, a stopper is provided on it.



Do not lift or carry the camera by holding only the Telescopic Microphone.



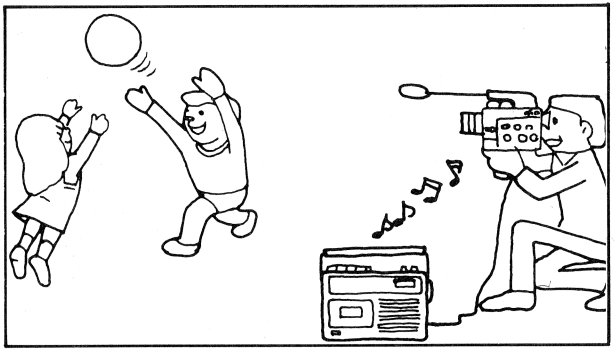
2. FM wireless microphone set*

(*May not be available due to governmental regulations in some countries.)

The optionally available FM Wireless Microphone Set is convenient in the sound filming of moving scenes such as a stage performance. Insert the receiver supplied with the microphone into the accessory shoe.

For details, refer to the relevant instruction manual.

15 Sound mixing for more pleasurable recording



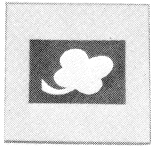
- It is possible to simultaneously record sounds from the Telescopic Microphone and the microphone or other external sources connected to the "MIC" jack.
  Another sound source connected to the "AUX" jack can also be mixed with these two sound sources.
- One recording technique is that in which background music is recorded from a tape recorder connected to the "AUX" jack while narration is recorded from the microphone.
- Try to devise a variety of ways of creating a unique sound track for your filming.
- The recording level must be adjusted with the source device's controls.
  (See page 16.)

16 Macrophotography – The personal touch

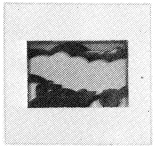
Exciting movie-making can be yours with the techniques that are possible using macrophotography. Insects, small flowers, prints, stamps, etc. can all be captured in minute detail to enhance the interest of your movies. Moreover, titling, focus-shifting and macro superimposition will permit you to make professional movies with a personal touch.

Since the XL-620 can focus in on a subject placed just in front of the camera (0 cm from the lens front surface), the exclusive Sankyo extra – a Macro Titler provided as a standard accessory – will permit various interesting techniques.

Macro Titler



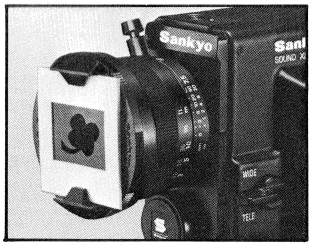
Example 1



Example 2

The Macro Titler is designed to be placed on the front end of the lens while holding a macro-shot subject in place. The Macro Titler can accommodate a mounted 35 mm slide or any transparent material corresponding to that size. When installed within the Macro Titler, the macro-shot subject is sharply focused in when the zoom ring is set to the dot on the macro scale (between 0 and 2 cm). Make your own trick masks (35 mm slides having a special shape to define the picture – see example 1) or title masks (35 mm slides carrying a space for titles – see example 2) and devise various ways of using the Macro Titler for yourself.

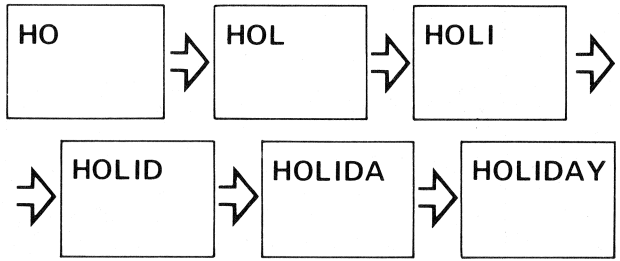
The following instructions are the basic steps you will use for titling, trick effects and superimposition.



1. Turning the zoom ring into the macro area, align the "•" mark on the macro scale to the index mark on the lens barrel.
2. Set the focusing ring to infinity (∞).
3. Place the Macro Titler on the front end of the lens.
4. Insert a mask into the titler.
5. Be sure that it is squarely placed when seen through the viewfinder.
6. Shoot for 5 – 7 seconds at AUTO.

Titling

You can write your own titles on a title mask, a 35 mm slide or on tracing paper. Outdoors, point the camera towards a bright sky – indoors, point the camera towards a white wall or sheet illuminated by two floodlights. An interesting technique is to write your title one letter at a time, shooting each letter for about 4 seconds and holding the final frame for about 7 seconds.



Macro Superimposition

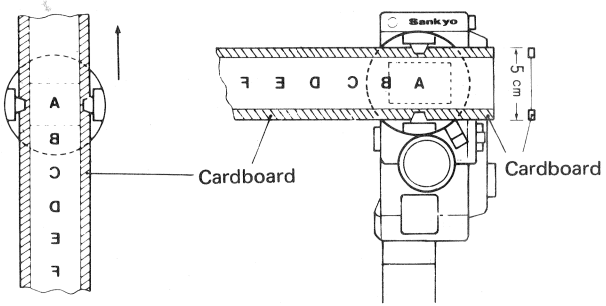
Use the trick and title masks to set the scene for fun and fantasy in your movies. Follow the basic directions for the Macro Titler. However, with a few changes you can produce a wide range of special effects.

A. Rather than focusing the lens at infinity "∞", focus the lens in advance to the subject to be photographed.
B. Take your shot with the zoom ring set to wide-angle. You'll see the sharply focused subject surrounded by the slightly shaded mask. Or you can shoot the first five seconds at the "•" position on the zoom ring and then turn the ring smoothly to the wide-angle position. Either technique will add a little magic to your movie.
C. Turn the zoom ring all the way from wide-angle to telephoto and zoom in on your subject. The mask will blur into soft streaks of color, beautifully framing your subject.

Macro superimposition of the written title and the subject

Moving Titles

Do you like action? Make it happen with moving titles! Write your titles on a strip of tracing paper about 5 cm (2") wide or on a roll of unexposed, developed 35 mm film. With narrow strips of cardboard folded in half and lightly glued to the paper to act as guides, you can slowly move the titles vertically or horizontally as shown in the diagram.



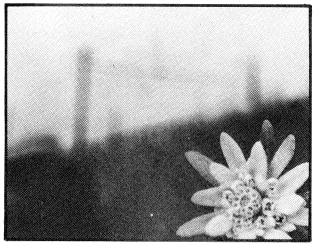
Titling without the Macro Titler

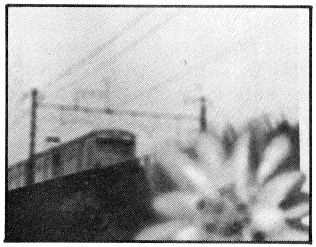
Use your imagination! Film picture postcards, maps or drawings you have done yourself. Be careful to illuminate your subject sufficiently.

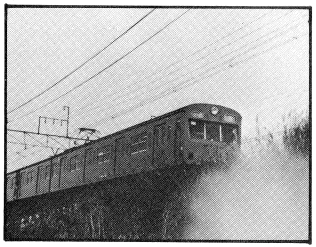
What is seen through the viewfinder is slightly smaller than what is being filmed. Be careful to frame your subject so that the entire image is included.

17 Try special effects with the camera's multi-functionality

Focus-shifting

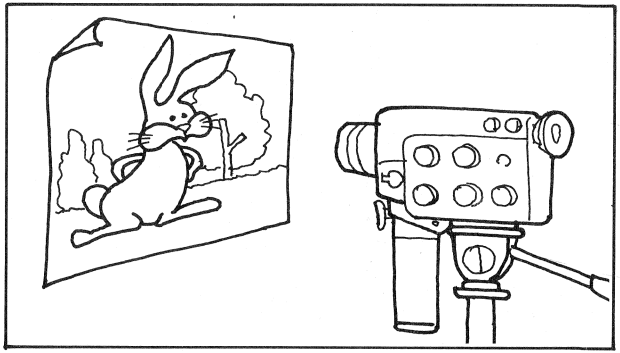






- With the macro switch locked, turn the manual zoom ring continuously from the macro area to the zoom area or vice versa. The focus will then change to produce an interesting sequence of shots containing a striking contrast between delicate out-of-focused objects and sharply in-focused objects.

Single shot tricks



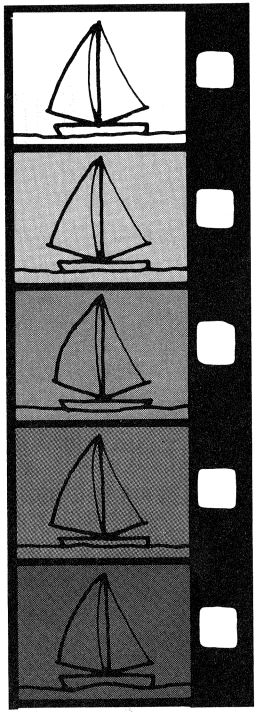
The main intention of single-frame filming is for effects. Single-frame filming is easy with this camera due to the built-in universal timer. The AN 1 setting of the trick shooting knob offers an ordinary single-frame mode. Also, this camera allows single-frame filming onto sound films.

Therefore, without changing the film, you can enter the single-frame mode directly from sound filming. However, the sound is not recorded properly because the period of exposure is too brief.

It is recommendable to disconnect the microphone during single-frame filming.

Animate an otherwise static subject or get a time lapse effect with successive single shots. Both interval timer mode and animation timer modes are applicable for this purpose.

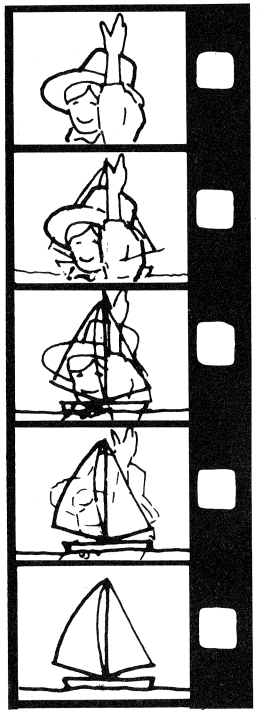
Fades



Fades offer an attractive and novel technique for opening or closing scenes. They cap your filming with professional polish and they can be used to make a group of scenes or shots stand out with added emphasis from the rest of the film. Using this effect to suggest the passing of time is commonly employed. Also, it is effective to use the fade-in technique for the beginning of a film, especially with titles, and to end the film with the fade-out technique.

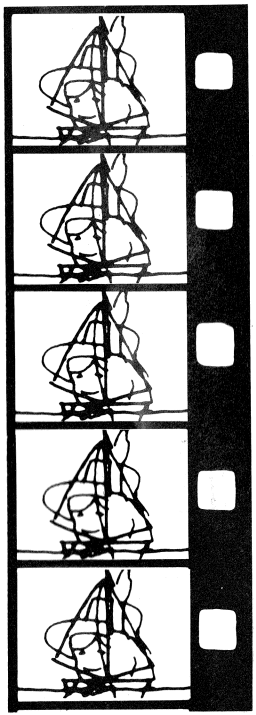
Devise your own methods using either the automatic picture and sound simultaneous fade facility or the manual picture fade facility.

Dissolves



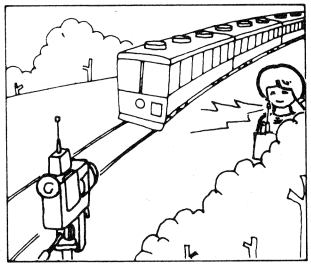
Dissolve is a technique used for running two scenes together which have a common link of some kind, and gives a less severe "break" in the visual impression than does a fade. If subjects are chosen with care, you can obtain visually impressive or amusing effects. You can dissolve one subject into another of a close resemblance. Or you can dissolve one movement into another of like composition. You can dissolve between shapes that have some similarity or the passage of time can be suggested by dissolving out and back in on the same subject again, showing some degree of progress in time.

Double exposures



Using the camera's rewind mechanism this effect is made possible by exposing the film for a second time. The lap dissolve lever is used also in this case, however, the aperture must be set manually. Double exposed scenes work best if both are shot somewhat under-exposed, as their combined image can otherwise have a rather washed out appearance. No cut and dried rule can be claimed for this procedure, as it depends largely on the particular kind of scene you have chosen for filming. With two well lit scenes for example, you should halve the recommended exposure for each. With this type of filming technique, trial and error method may be the only way for you to meet with satisfactory results. Making "ghosts" is a novelty you may wish to try with the double exposure technique.

18 Add to the pleasure by using a Radio Control*



(*May not be available due to governmental regulations in some countries.)

The Radio Control is one of Sankyo's exclusive accessories. It is used to operate the shutter release trigger when you are away from the camera. Since there is no wire between the cameraman and the camera, it is especially useful for making wild life movies.

The single-frame mode is also controllable with the Radio Control. Its connection is made to the "REM" jack. Therefore, the provided microphone with remote control switch cannot be used at this time. The best way is to use the Telescopic Condenser Microphone and install the Radio Control into the accessory shoe of that microphone.

For details refer to the instruction manual for the Radio Control.

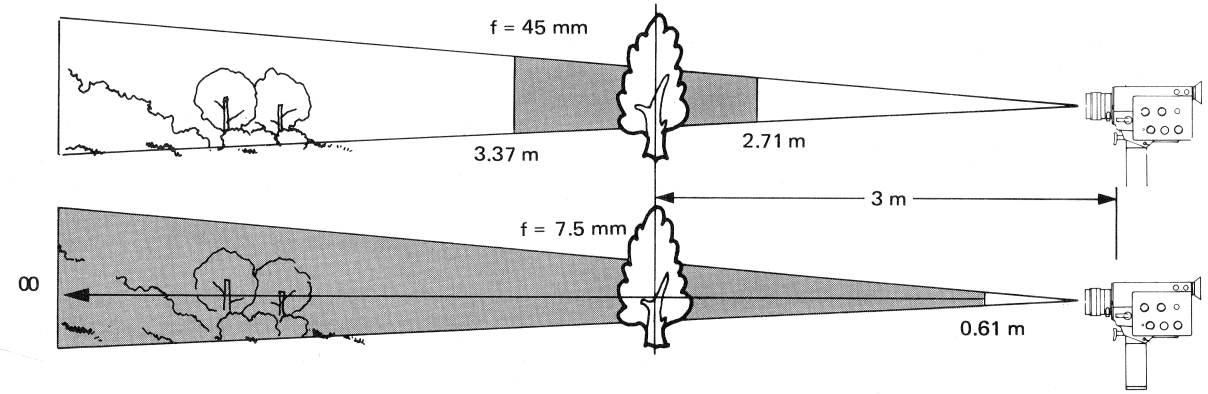
DEPTH-OF-FIELD TABLES

When a subject is in focus, objects nearer and farther from the camera will also be in focus. The distance between the nearest and farthest objects which are in focus is called the depth of field. The distances shown are measured from the film plane mark (ϕ) of the camera.

Keep in mind the following for reference . . .
The shorter the focal length, the greater the depth of field, and the greater the f-stop number (or the smaller the aperture), the greater the depth of field.

SOUND XL-620 f=20							
Distance / Aperture	Meter	∞	10	5	3	2	1.5
	Feet	∞	30	15	10	6	5
1.2	Meter	25.64 ~ ∞	7.19 ~ 16.39	4.18 ~ 6.21	2.69 ~ 3.40	1.86 ~ 2.17	1.42 ~ 1.59
	Feet	84.12 ~ ∞	22.11 ~ 46.63	12.73 ~ 18.26	8.94 ~ 11.35	5.60 ~ 6.46	4.72 ~ 5.32
2.8	Meter	10.88 ~ ∞	5.21 ~ 123.82	3.43 ~ 9.25	2.35 ~ 4.14	1.69 ~ 2.45	1.32 ~ 1.74
	Feet	35.69 ~ ∞	16.30 ~ 188.15	10.56 ~ 25.87	7.81 ~ 13.89	5.14 ~ 7.21	4.39 ~ 5.81
5.6	Meter	5.44 ~ ∞	3.52 ~ ∞	2.61 ~ 61.91	1.93 ~ 6.69	1.46 ~ 3.16	1.18 ~ 2.07
	Feet	17.85 ~ ∞	11.19 ~ ∞	8.15 ~ 94.07	6.41 ~ 22.75	4.49 ~ 9.04	3.91 ~ 6.95
16	Meter	1.92 ~ ∞	1.61 ~ ∞	1.39 ~ ∞	1.17 ~ ∞	0.98 ~ ∞	1.84 ~ 6.82
	Feet	6.31 ~ ∞	5.21 ~ ∞	4.44 ~ ∞	3.87 ~ ∞	3.08 ~ 122.39	2.79 ~ 24.09

Example: Comparison for f = 7.5 mm and f = 45 mm with the same aperture of f/5.6



SOUND XL-620 f=7.5

Distance / Aperture		∞	10	5	3	2	1.5
	Meter	∞	10	5	3	2	1.5
	Feet	∞	30	15	10	6	5
1.2	Meter	3.61 ~ ∞	2.65 ~ ∞	2.09 ~ ∞	1.64 ~ 17.86	1.29 ~ 4.49	1.06 ~ 2.57
	Feet	11.83 ~ ∞	8.48 ~ ∞	6.61 ~ ∞	5.42 ~ 64.65	3.98 ~ 12.18	3.51 ~ 8.66
2.8	Meter	1.53 ~ ∞	1.33 ~ ∞	1.17 ~ ∞	1.01 ~ ∞	0.87 ~ ∞	0.76 ~ 77.01
	Feet	5.02 ~ ∞	4.30 ~ ∞	3.76 ~ ∞	3.34 ~ ∞	2.73 ~ ∞	2.50 ~ ∞
5.6	Meter	0.76 ~ ∞	0.71 ~ ∞	0.66 ~ ∞	0.61 ~ ∞	0.55 ~ ∞	0.51 ~ ∞
	Feet	2.51 ~ ∞	2.32 ~ ∞	2.15 ~ ∞	2.01 ~ ∞	1.77 ~ ∞	1.67 ~ ∞
16	Meter	0.27 ~ ∞	0.26 ~ ∞	0.26 ~ ∞	0.25 ~ ∞	0.24 ~ ∞	0.23 ~ ∞
	Feet	0.89 ~ ∞	0.86 ~ ∞	0.84 ~ ∞	0.81 ~ ∞	0.77 ~ ∞	0.75 ~ ∞

SOUND XL-620 f=45

Distance / Aperture		∞	10	5	3	2	1.5
	Meter	∞	10	5	3	2	1.5
	Feet	∞	30	15	10	6	5
1.2	Meter	129.81 ~ ∞	9.28 ~ 10.83	4.81 ~ 5.20	2.93 ~ 3.07	1.97 ~ 2.03	1.48 ~ 1.52
	Feet	425.88 ~ ∞	28.03 ~ 32.27	14.49 ~ 15.55	9.77 ~ 10.24	5.92 ~ 6.09	4.94 ~ 5.06
2.8	Meter	55.07 ~ ∞	8.46 ~ 12.22	4.58 ~ 5.50	2.85 ~ 3.17	1.93 ~ 2.08	1.46 ~ 1.54
	Feet	180.68 ~ ∞	25.73 ~ 35.97	13.85 ~ 16.36	9.48 ~ 10.59	5.81 ~ 6.21	4.87 ~ 5.14
5.6	Meter	27.54 ~ ∞	7.34 ~ 15.70	4.23 ~ 6.11	2.71 ~ 3.37	1.86 ~ 2.16	1.42 ~ 1.59
	Feet	90.34 ~ ∞	22.52 ~ 44.91	12.86 ~ 17.99	9.00 ~ 11.24	5.63 ~ 6.43	4.74 ~ 5.29
16	Meter	9.74 ~ ∞	4.93 ~ ∞	3.30 ~ 10.28	2.29 ~ 4.34	1.66 ~ 2.52	1.30 ~ 1.77
	Feet	31.94 ~ ∞	15.47 ~ 493.71	10.21 ~ 28.28	7.62 ~ 14.56	5.05 ~ 7.39	4.32 ~ 5.93

The shaded-in ranges correspond to the sample comparison appearing on the preceding page.

Depth-of-Field Table for Macro Filming

The distances shown are measured from the lens front surface mark (●) on the focusing ring.

This table covers only the figures on the zoom ring, but it is possible to focus between these figures.

SOUND XL-620

Distance / Aperture		0	5	10	20	50	100
	cm	0	5	10	20	50	100
	inch	0	2	4	8	20	40
1.2	cm	−0.03 ~ 0.03	4.81 ~ 5.19	9.54 ~ 10.49	18.65 ~ 21.51	43.56 ~ 58.44	78.41 ~ 136.91
	inch	−0.01 ~ 0.01	1.92 ~ 2.07	3.81 ~ 4.19	7.46 ~ 8.60	17.42 ~ 23.37	31.36 ~ 54.76
2.8	cm	−0.07 ~ 0.07	4.57 ~ 5.46	8.97 ~ 11.20	17.08 ~ 23.84	37.04 ~ 74.91	60.55 ~ 263.64
	inch	−0.03 ~ 0.03	1.83 ~ 2.18	3.59 ~ 4.48	6.83 ~ 9.53	14.81 ~ 29.96	24.22 ~ 105.45
5.6	cm	−0.14 ~ 0.16	4.19 ~ 5.98	8.09 ~ 12.62	14.80 ~ 29.17	29.11 ~ 142.62	42.81 ~ ∞
	inch	−0.05 ~ 0.06	1.67 ~ 2.39	3.23 ~ 5.05	5.92 ~ 11.67	11.64 ~ 57.04	17.12 ~ ∞
16	cm	−0.39 ~ 0.49	3.02 ~ 8.54	5.65 ~ 21.56	9.42 ~ 111.04	15.28 ~ ∞	19.18 ~ ∞
	inch	−0.15 ~ 0.19	1.21 ~ 3.41	2.26 ~ 8.62	3.76 ~ 44.41	6.11 ~ ∞	7.67 ~ ∞

SOUND XL-620 f=34

Distance / Aperture		∞	10	5	3	2	1.5
	Meter	∞	10	5	3	2	1.5
	Feet	∞	30	15	10	6	5
1.2	Meter	74.10 ~ ∞	8.81 ~ 11.56	4.68 ~ 5.36	2.88 ~ 3.13	1.95 ~ 2.06	1.47 ~ 1.53
	Feet	243.12 ~ ∞	26.70 ~ 34.22	14.73 ~ 15.99	9.60 ~ 10.43	3.86 ~ 6.15	4.90 ~ 5.10
2.8	Meter	31.44 ~ ∞	7.59 ~ 14.66	4.37 ~ 5.95	2.74 ~ 3.32	1.88 ~ 2.14	1.43 ~ 1.58
	Feet	103.15 ~ ∞	23.24 ~ 42.30	13.10 ~ 17.55	9.12 ~ 11.07	5.67 ~ 6.37	4.77 ~ 5.25
5.6	Meter	15.72 ~ ∞	6.11 ~ 27.48	3.79 ~ 7.33	2.52 ~ 3.71	1.77 ~ 2.29	1.37 ~ 1.66
	Feet	51.57 ~ ∞	18.97 ~ 71.72	11.62 ~ 21.15	8.38 ~ 12.41	5.37 ~ 6.79	4.56 ~ 5.54
16	Meter	5.56 ~ ∞	3.57 ~ ∞	2.63 ~ 49.83	1.95 ~ 6.52	1.47 ~ 3.92	1.18 ~ 2.05
	Feet	18.23 ~ ∞	11.34 ~ ∞	8.23 ~ 84.58	6.46 ~ 22.14	4.51 ~ 8.94	3.92 ~ 6.89

ACCESSORIES

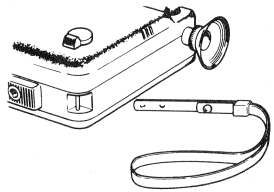
STANDARD ACCESSORIES

Wrist strap

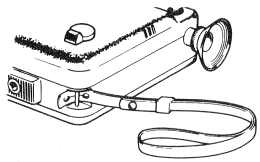
How to attach the wrist strap to the camera

Please make it a rule to put the wrist strap around your wrist while shooting or while carrying along the camera to avoid dropping the camera by accident.

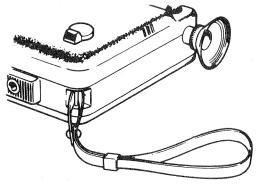
1



2



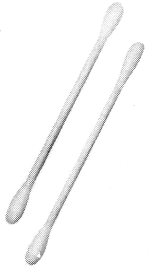
3



Microphone (with remote control switch)
Microphone stand SMN-103

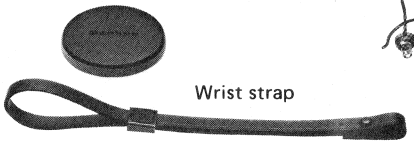
Wind screen

Head cleaner SCT-031



Lens cap SLC-535

Earphone SPE-803



Wrist strap

OPTIONAL ACCESSORIES

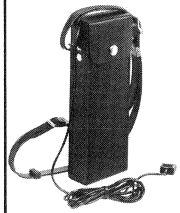
*May not be available due to governmental regulations in some countries.

Lens hood
SFD-535

Carrying case
SCB-035

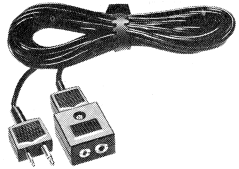
Radio control*

DC power pack
SBP-931

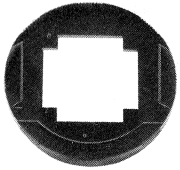


Remote control SRS-431

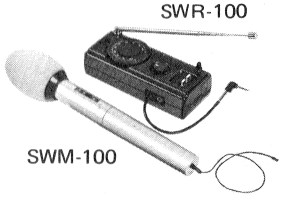
Microphone extension cord
SEC-532



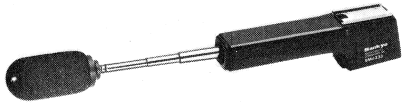
Macro titler
STS-102



FM wireless
microphone set*

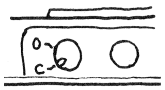
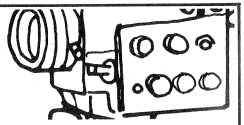


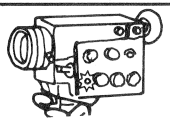
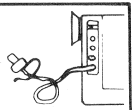
Telescopic condenser microphone
SMU-233

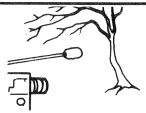
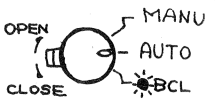


Movie light adapter
SAH-132

TROUBLESHOOTING

When this happens	 Viewfinder is black.	Viewfinder image is blurred.	Viewfinder image cannot be focused sharply.	 Checker lamp does not light.
Check!	• Check viewfinder shutter open/close knob.	• Have you accurately adjusted the viewfinder to your eyesight? • Is the zoom ring located in the zoom area? • Is the lens surface clean?	• Have you accurately adjusted the viewfinder to your eyesight? • Have you focused the lens at maximum telephoto?	• Are the batteries correctly loaded? • Are the batteries discharged? • Is the trick shooting knob set to the "ST" mode?
Refer to pages	10	10, 11, 51	10, 11	4, 5
Remarks		Perform normal filming in the zoom area.	Adjust the diopter control to the eyesight of the camera user.	

When this happens	 Checker lamp lights, but the camera does not function.	Battery discharge is too fast.	Film jams in middle of roll.	 Sound monitoring is impossible.
Check!	• Is the film cartridge correctly loaded? • Is the remote control switch on the microphone set to ON?	• Are the batteries loaded with the correct polarity?	• Open camera and remove film. • Turn center take-up spool clockwise until jammed film winds into cartridge. • Check batteries. • Replace cartridge and continue shooting.	• Is the power switch "ON"? • Have you pressed the shutter release trigger until the "MON" line? • Is the microphone securely plugged into the microphone jack? • Is the earphone securely plugged into the MON jack? • Are you using the earphone provided?
Refer to pages	6, 7, 15, 26	4	7	15
Remarks			Be careful of the footage counter indication, since it will not show the amount of film in camera.	

When this happens	 Rustling or rumbling noise is heard.	Distorted sound.	Almost no image on the film after development.	 Manual aperture control lever does not move.
Check!	• Is the microhone firmly fixed? • Are you using the wind screen?	• Does the battery checker light? • Is the microphone too close to the sound source?	• Did you shoot with the aperture control in the "MANU" range?	• Is the auto/manual aperture control selector to "AUTO"?
Refer to pages	34	5, 34	8, 9	8, 19
Remarks	Do not apply vibration to the microphone. Protect the microphone from wind.	Place the microphone where optimum object sound is heard.	Generally employ automatic EE aperture control. After finishing shots with manual aperture control, do not forget to return the aperture control to "AUTO".	First set the auto/manual aperture control selector to "MANU" and then move the lever.

SPECIFICATIONS

Film	Super- 8 sound or silent film (50 ft)
Lens	Sankyo zoom lens (with macro) f/1.2, f = 7.5 – 45 mm (6X) 13-group/14-element Shortest focusing distance 1.5 m (5 ft) for zoom area filming 0 cm (0") for macro area filming Filter size: 52 mm dia. Lens cap: 54 mm dia.
Focusing	Split image focusing
Viewfinder	Reflex viewfinder with split image focusing Adjustable to individual eyesight within the range of –5 to +5 diopters (with lock mechanism) Provided with eyecup Provided with viewfinder shutter
Zooming	Automatic power zooming Approximately 7 seconds from wide-angle to telephoto or vice versa Manual zooming possible with the manual zoom ring
Power source	Six (6) penlight alkaline manganese batteries "AA" Battery life: 10 rolls of film at normal temperature The batteries are installed in the grip. External 9 V DC source The polarity of the socket : (–) at the center pin and (+) at the rim
Battery checker	Lever operation and LED indication
Filming speed	18, 24, 36 fps, and single-frame (for both sound and silent films)
Shutter opening	220°
Film sensitivity	ASA 40, 160 (Daylight film) ASA 40, 160 (Type-A film) ASA 40, 160 (Type-G film) Film sensitivity is automatically set by the cartridge.
Exposure meter	Fully automatic aperture control with through-the-lens SBC (Silicon Blue Cell) and digital servomotor Aperture range f/1.2 – 45 (complete fade-out possible) Manual control: Aperture scale and indicator are located in the viewfinder. Exposure warnings: Red areas in the viewfinder for under- and over-exposure
Backlighting compensation	Lever operation
Filter	Built-in Type 85 filter Automatically controlled by the film cartridge or manually controlled by the filter control knob
Film footage counter	Automatic resetting counter
Film transport indicator	Green light flickers in the viewfinder Also functions as a film end signal
T.V. lamp	Red light on the front of the camera shows when filming is in process.
Grip	Foldaway grip (contains batteries)
Flash synchronization	Flash sync socket for single-frame exposure
Recording and control amplifier circuit	12 ICs (5 LSIs, 2 hybrid ICs), 17 transistors and 20 diodes
Sound recording input jacks	MIC jack Input impedance:

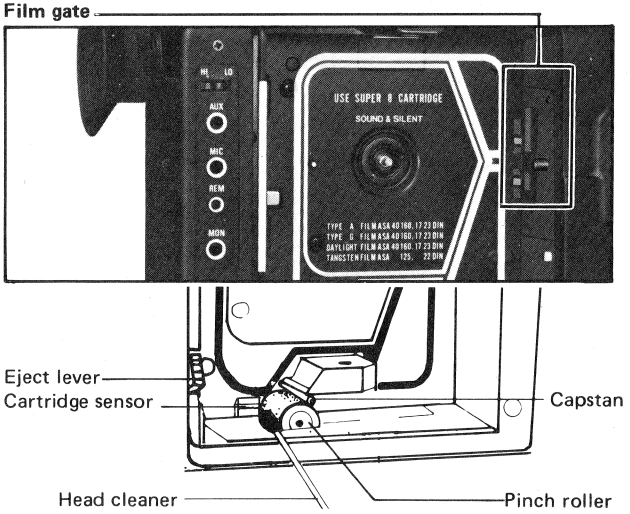
	High: 1.8 kohms Low: 2.2 kohms Input level: High: −70 dB Low: −60 dB AUX jack Input impedance: High: 390 kohms Low: 390 kohms Input level: High: −20 dB Low: −10 dB
Recording level control	ALC (Automatic Level Control)
Sound level indication	Orange light flickers in the viewfinder
Recording sensitivity	High — low switchable with a 10 dB difference
Auto-fading	Simultaneous picture and sound fading with lever operation Fade-out mark is also provided in the viewfinder.
Lap dissolve	Simultaneous picture and sound lap dissolve with lever operation Lap dissolve indicator is provided in the viewfinder.
Interval timer	Selectable intervals: 0.5, 2, 15 and 60 seconds
Self-timer	Standby time: 10 seconds Filming time: 5, 10 seconds
Preset timer	Filming time: 4, 15 seconds
Multi-frame exposure	4 frames
Microphone	Omni-directional, dynamic microphone, 500 ohms, Cord: 4.5 m (14.8 ft) With remote control switch
Sound monitoring	Possible with earphone (provided) The shutter release trigger acts as a monitor switch
Earphone	Dynamic, 8 ohms
Remote control jack	For connecting Remote Control and other accessories
Other features	1) Film end alarm 2) Power saving circuit 3) Power switch with running lock position 4) Tripod socket (JIS B 7103 1/4-20UNC) 5) Wrist strap (removable) 6) Accessory shoe (hot shoe) (JIS B 7101) 7) Movie light socket (JIS B 7103 1/4-20UNC)
Dimensions	231(L) x 126(H) x 72(W) mm (9-1/16" x 5" x 2-7/8")
Weight (Without batteries and cartridge)	1.2 kg (2.6 lbs.)

Standard accessories

1) Wrist strap
2) Lens cap
3) Microphone (with remote control switch)
4) Microphone stand
5) Wind screen
6) Earphone
7) Head cleaner
8) Lens hood
9) Macro titler

MAINTENANCE

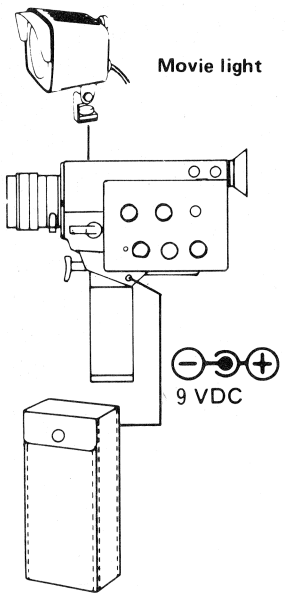
- Do not store the camera where there is excessive humidity.
- Do not leave the lens stained with fingerprints, as they may be difficult to remove.
- Wipe the film gate from time to time with a soft, dry cloth.
- Remove the batteries when you are not using the camera for several weeks.
- Avoid leaving the camera where it is extremely hot, in closed cars, for example.
- If the magnetic head is dirty, it will increase noise and cause the sound quality to deteriorate.
- Keep the head and pinch roller clean at all times by wiping gently with the head cleaner provided or a soft cloth.
- Keep the connection terminals in the accessory shoe clean.
- Do not bring a metallic object close to or into contact with the head.
- A magnetic field will have an adverse effect on sound film. Do not place the camera close to things which produce strong magnetic fields (motors, transformers, radios, TVs, magnets, etc.).
- Be careful not to drop the camera or allow it to get wet. If this happens, the camera may be damaged beyond repair or require expensive repairs.



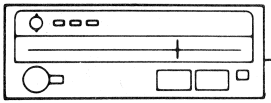
- To clean the pinch roller
  1. Open the side cover and set the power switch to "R-L".
  2. Press the shutter release trigger to run the camera.
  3. While pressing the cartridge sensor button, wipe the pinch roller with the head cleaner soaked with rubber cleaning alcohol (isopropyl alcohol).

Be careful not to let alcohol come in contact with plastic parts such as the camera body.

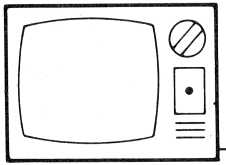
TOTAL CONNECTION DIAGRAM



DC power pack
Contains 6 "C"-size batteries.
(optional accessory)



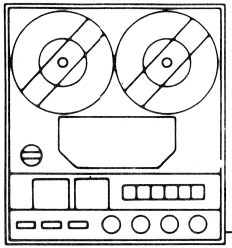
AM/FM tuner



Television

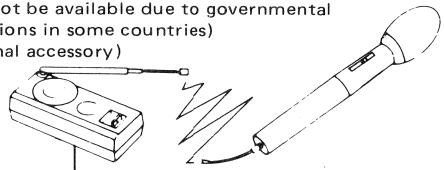
EAR

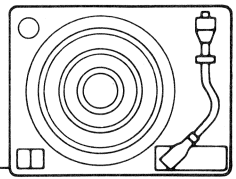
(Low impedance cord)



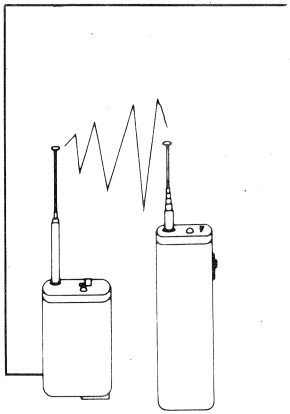
Tape deck
A special cord is required for stereo decks.

FM wireless microphone set
(May not be available due to governmental regulations in some countries)
(optional accessory)

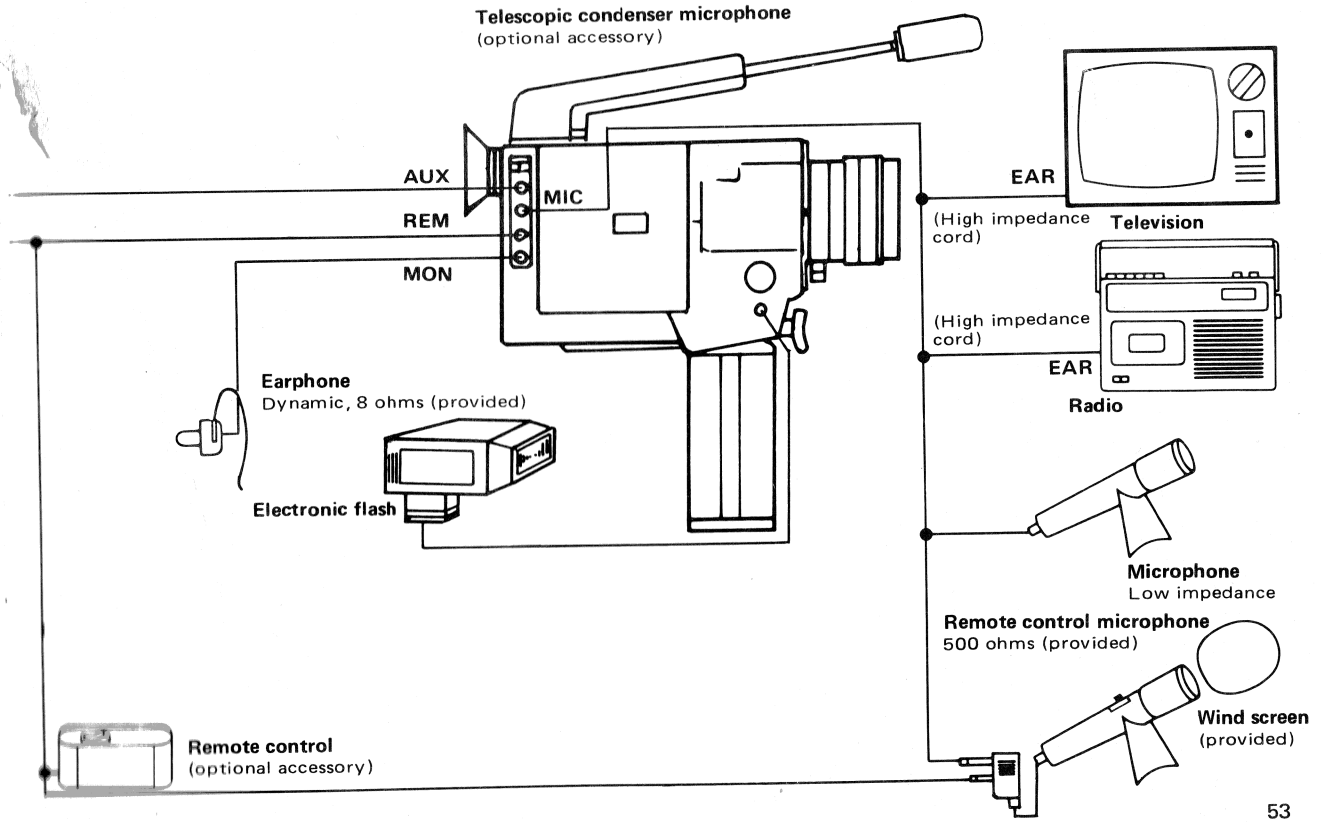




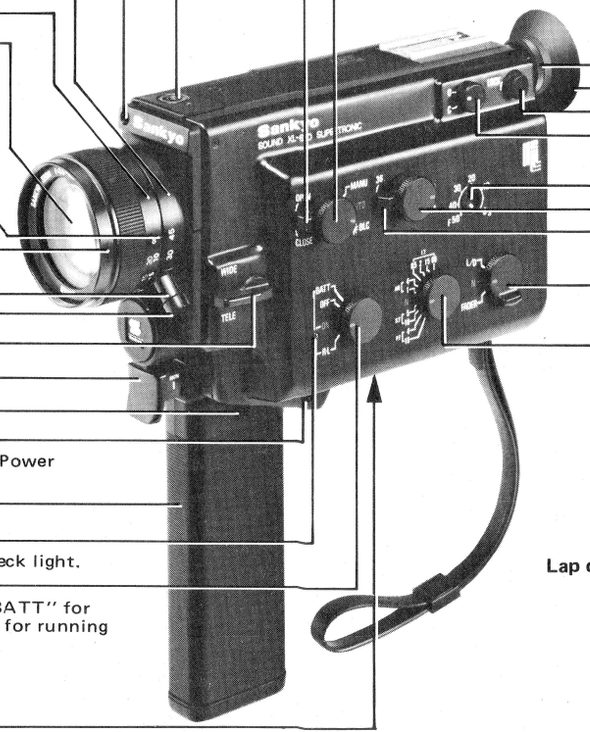
Record player
With crystal pick-up cartridge or high output ceramic cartridge.



Radio control
(May not be available due to governmental regulation in some countries)
(optional accessory)


Telescopic condenser microphone
(optional accessory)
AUX
REM
MON
MIC
EAR
(High impedance cord)
Television
(High impedance cord)
EAR
Radio
Earphone
Dynamic, 8 ohms (provided)
Electronic flash
Microphone
Low impedance
Remote control microphone
500 ohms (provided)
Wind screen
(provided)
Remote control
(optional accessory)

NAME OF PARTS AND THEIR FUNCTIONS



Movie light socket

T.V. lamp

Zoom ring

Focusing ring

Zoom lens
f/1.2, f = 7.5 – 45 mm

Index line

Lens front surface mark
For macrophotography

Zoom lever

Macro switch

Power zoom lever

Shutter release trigger

Grip lock release button

External DC socket
For connection of a DC Power Pack (optional).

Foldaway grip

Power indicator
Also acts as a battery check light.

Power switch
Four-position switch; "BATT" for battery checking, "R-L" for running lock operation.

Tripod socket

Manual aperture control lever
Push up to open the aperture and press down to close.

Auto/Manual aperture control selector
Also functions as a backlighting compensator.

Diopter control ring

Eye cup

Diopter control lock knob

Viewfinder shutter open/close knob

Film footage counter

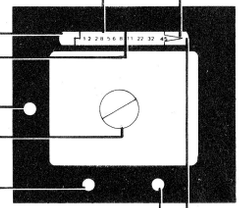
Filming speed selector

Instant slow-motion lever
Push up for 36 fps filming.

Lap dissolve/Auto-fade lever
Push up for lap dissolving and press down for auto-fading.

Trick shooting knob
Provides four different filming modes: interval timer (IT), animation timer (AN), self-timer (ST) and preset timer (PT) modes.

Indicators in the viewfinder



Aperture scale

Under-exposure mark

Aperture indicator

Lap dissolve/Auto-fade indicator (red)

Split image range finder

Sound level indicator (orange)

Film running indicator (green)
Also acts as a film end signal.

Fade-out mark

Over-exposure mark

Sound recording sensitivity select switch
Switchable for high and low.

AUX jack
For connection of a sound source to be recorded.

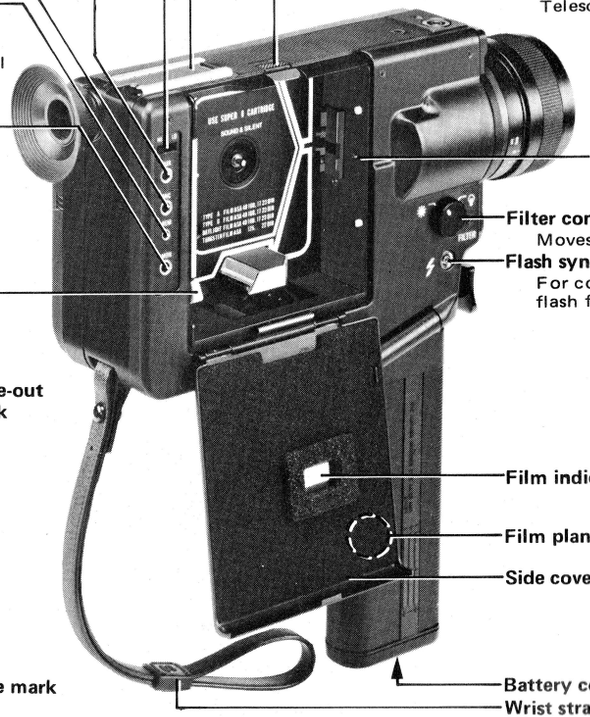
Microphone jack (MIC)

Remote control jack (REM)
For connection of a Remote Control, Radio Control (both optional) or the remote control terminal of the microphone provided.

Earphone jack (MON)
For sound monitoring.

Accessory shoe
Accommodates the Telescopic Condenser Microphone, Radio Control and the receiver of the FM Wireless Microphone Set (all optional). A hot shoe having a live terminal for connection of Telescopic Condenser Microphone.

Side cover release button



Guide pin

Filter control knob
Moves the built-in filter in or out.

Flash sync socket
For connection of an electronic flash for single-frame filming.

Eject lever

Film indication window

Film plane mark (ϕ)

Side cover

Battery compartment lid

Wrist strap

Sankyo

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Printed in Japan
KZE-2285B